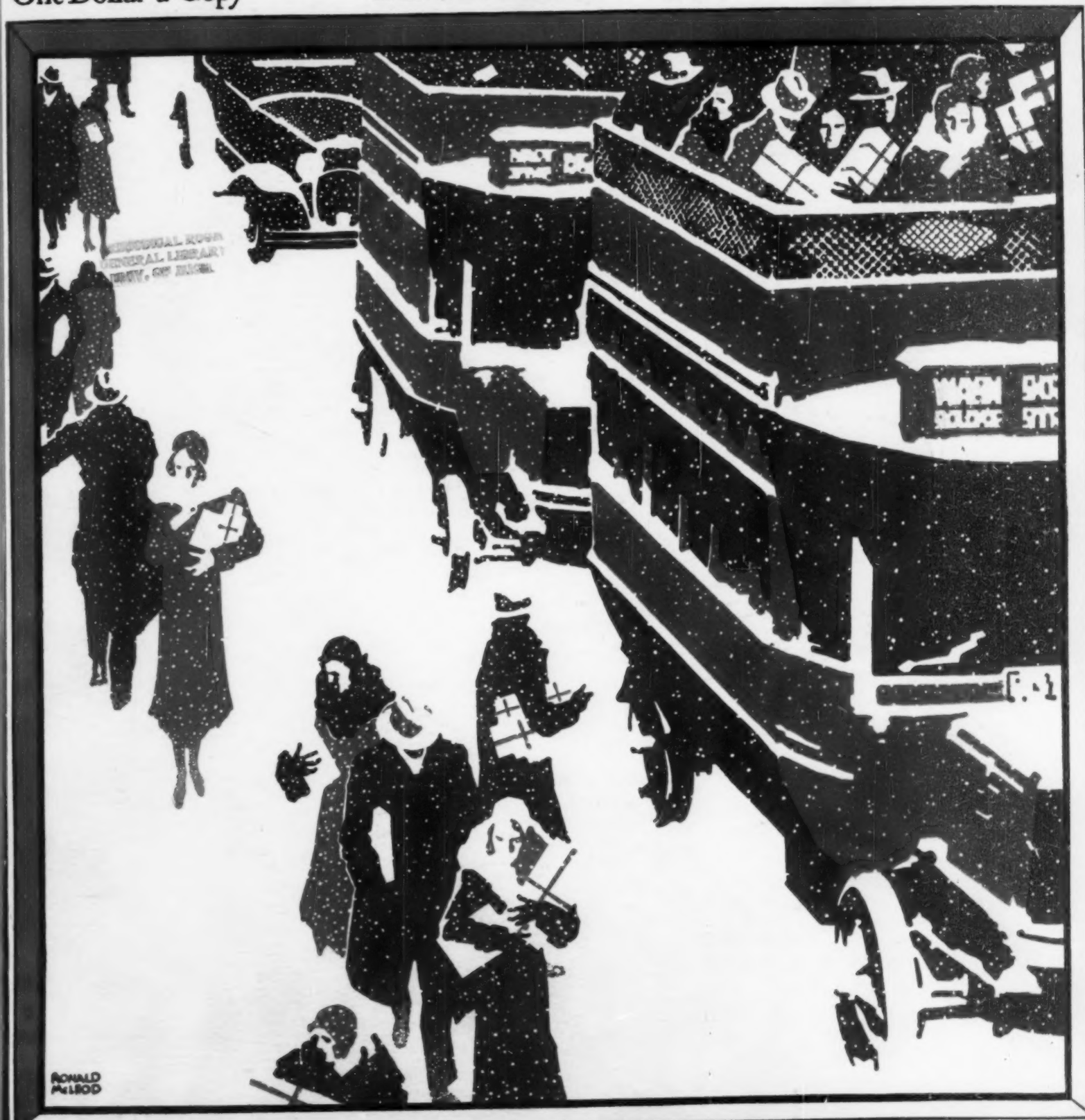
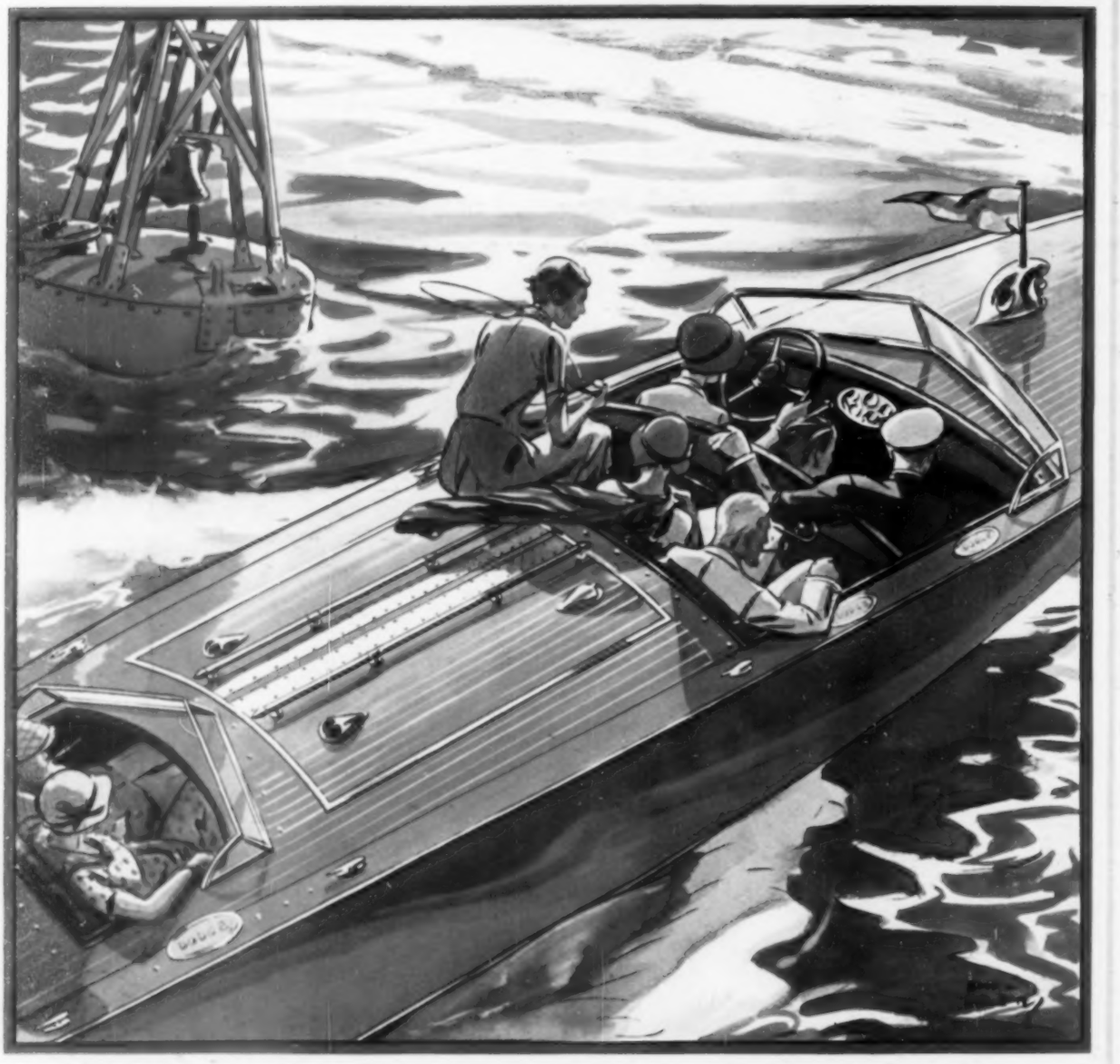
Fortune

One Dollar a Copy DECEMBER 1930 Ten Dollars a Year

NOV 25 1930





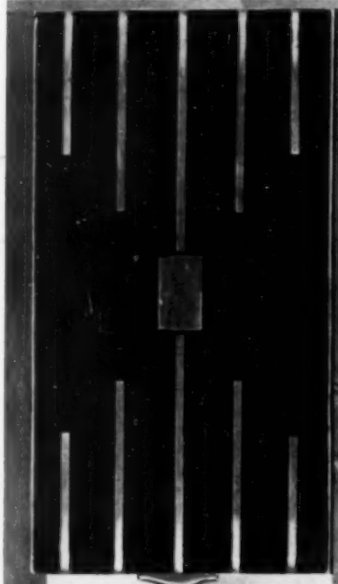
THE 25-FOOTER—165 H. P. LYCOMING STRAIGHT 8 ENGINE—38 M. P. H.—PRICE, F. O. B. WORKS, $3200

DODGE BOATS are true to the tradition of luxury in fine boats . . . Yet Dodge methods of quantity production have brought them within the reach of thousands who never before could own such boats . . . Sleek, flashing hulls of genuine Mahogany over frames of stout white oak . . . fittings of lasting beauty . . . appointments complete to the last detail of comfort and convenience . . . a smooth flow of dependable power . . . unmatched speed . . . The vast new Dodge plant, equipped throughout for the most modern methods of quantity building, has produced all this at prices hitherto impossible . . . Models of 16, 21, 25 and 28-foot length, powered by Lycoming with motors of 40 to 300 horsepower and speeds of 30 to 45 m.p.h., start at the amazingly low price of $945 . . . Complete catalog will be mailed on request

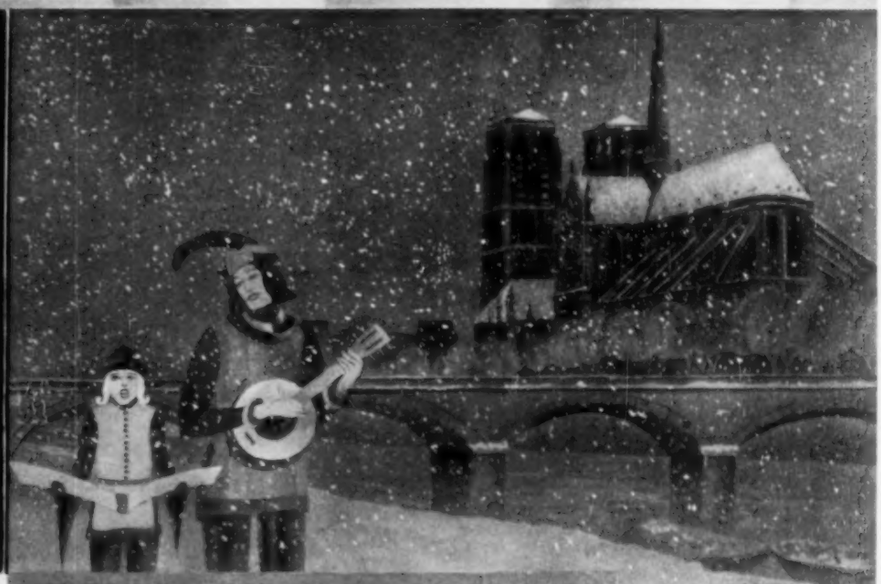
DODGE BOATS

HORACE E. DODGE BOAT & PLANE CORPORATION. Works: Newport News, Virginia. GENERAL SALES DEPARTMENT: 21 West 46th Street, New York City

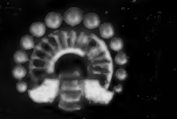
Pour Noël



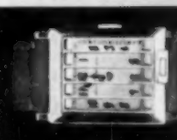
Cigarette Case in silver and black lacquer with gold stripes



French Jet Cigarette Holder with a smart band of rose Diamonds



Clip-Clasp festooned with Diamonds, Crystal and Coral ✣ The 18 kt. gold Sport Watch is an exclusive new Place Vendôme Creation



Above, 18 kt. gold Shutter-Watch. Below, a cabochon Ruby Ring set with large half-moons and baguettes

VAN CLEEF & ARPELS INC. **GREENLEAF & CROSBY CO. INC.**

671 Fifth Avenue—New York

Palm Beach—Royal Poinciana ✣ The Breakers **Miami Beach**—1000 Lincoln Road

Van Cleef & Arpels Paris Deauville Le Touquet Nice Cannes

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CARON CORP., 389 FIFTH AVE., NEW YORK

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For a happy, prosperous

New Year

Left: Del Monte. Above: View of the Golden Gate

1931 What will it hold for you? Much we hope. This we know: A winter in the warm sunny California that San Francisco centers will put you in fine fettle for whatever is to come.

Long days on the links above the Golden Gate, at Del Monte and Pebble Beach . . . days in the saddle or motoring in the sun, will form a happy prelude to the busy days that lie ahead.

If you think you can't afford the time for fun—*Listen!* California is the fastest growing State in all the Union; San Francisco is its great headquarters city. The development the census showed you is a many-sided one. You cannot overlook this potent territory . . . if you can't take time for a winter holiday, then come on business. Edge the other in.

Surely you want to know more about the thirteen-million-people market that San Francisco serves most economically. See why this city holds financial and commercial as well as industrial leadership of the West. See the harbor, largest land-locked harbor in the world, that ranks below New York alone in value of water-borne tonnage. Study the opportunity that lies in the awakening market of 900,000,000 people in the lands around the Pacific.

Everywhere alert men are seeking to know more about this strategically located city. A city in the State whose wealth grows faster than its fast-increasing population.

Winter in San Francisco. Study the opportunity for your business here . . . And carry home a summer tan.

San Francisco wishes you a happy, prosperous New Year and she'll do her best to make it so.

SAN FRANCISCO

IN CALIFORNIA—"WHERE LIFE IS BETTER"

Write Californians Inc., Dept. 2212, 703 Market Street, San Francisco, for the two free, illustrated books: "San Francisco—in California—Where Life is Better" and "Why Manufacturers Choose San Francisco."

THE WORLD THAT FOUND ITSELF

YOU will remember Kipling's ship which was a dissonance of voices—of rivets, of beams, of engines, of deck planks—until the stress of a storm blended them into one voice, and that was The Ship.

So with the world, whose voices of yesterday were of London, or of Paris, or of New York, or of Berlin—but from whose dissonances is now emerging one voice—which is The World.

Working for many years with manufacturers whose products have crossed the boundaries of states and nations, we have branched into eleven offices in North America and three in Europe—the better to understand the Voice of the World, and speak its common tongue.

McCANN-ERICKSON
INCORPORATED

NEW YORK · CHICAGO · CLEVELAND · SAN FRANCISCO · DENVER
SEATTLE · LOS ANGELES · TORONTO · MONTREAL
VANCOUVER · WINNIPEG · LONDON · PARIS · FRANKFORT o.M.

DISTINCTIVE HOLIDAY GIFTS

These Handsome French Moire Silk Cravats, Luxurious in Quality, come in Choice Colorings. Price, $6.50 each. Please state Colors preferred when ordering by mail.

Illustrated Brochure sent upon request

A. Sulka & Company

SHIRTMAKERS AND HABERDASHERS

LONDON
27 Old Bond Street

NEW YORK
512 Fifth Avenue

CHICAGO
6 So. Michigan Avenue

PARIS
2 Rue de Castiglione

The
NEWHOUSE
GALLERIES

"BOY WITH DOG"
BY
WILLIAM DOBSON

PAINTINGS

New York
11 EAST 57th STREET

St. Louis
484 N. KINGSHIGHWAY

Aristocratic JEWELRY for MEN —

Brand-Chatillon specializes in the all-important jeweled accessories which distinguish the man of aristocratic taste and correct grooming.

Jumping-Hour Wrist Watch. The hour flashes in the dial face. White gold. Swiss 17-jewel movement. $375.

Dial Telephone Pencil. Revolving ballend. $24.

Book Locket. Photographs reproduced on gold leaves. Gold with enamel motif. Four sizes. $50 to $120.

Automatic Opening Watch. Can be opened with one finger. Closing cover winds watch. In all leathers. $65.

Jeweled Tortoise Shell and Rock Amber Cigarette Holder. Set with sapphires and diamonds. $150.

French Bit Cuff Links. White gold with lapis mounted on ends. $52. Carnelian, $50. Green Onyx, $50. Sapphire, $60. Also in green gold.

Combination Cigarette Lighter and Watch. 14k Gold. $275.

French Wrist Watch. 18k Gold. Triple cord strap. An exceptionally handsome timepiece. $225.

Dress Set. Cuff Links, Studs and Waistcoat Buttons, Black Onyx with platinum center, set with row of brilliants. $700.

THE BRAND-CHATILLON CORPORATION

Jewelers & Silversmiths

775 FIFTH AVE. *Savoy Plaza* NEW YORK

JOHN LEVY GALLERIES

PAINTINGS

ONE EAST 57TH STREET
NEW YORK

CHARLES *of* LONDON

Interiors

NEW YORK
2 WEST 56TH STREET
730 FIFTH AVENUE

LONDON
7 WOODSTOCK STREET
NEW BOND STREET

Member of the Antique and Decorative Arts League

Alfred Nelson Co

580 FIFTH AVE. N. W. Corner 47th Street NEW YORK

We are noted for making the finest strictly custom made to individual measure sack suits for $150.

VIOLA ROOT CAMERON

Genealogist

ESTABLISHED IN 1913

FAMILY HISTORIES COMPILED AND PUBLISHED

COATS OF ARMS

CORRESPONDENCE INVITED

521 FIFTH AVENUE
NEW YORK

57 CHANCERY LANE
LONDON

56, FAUBOURG SAINT-HONORE
PARIS

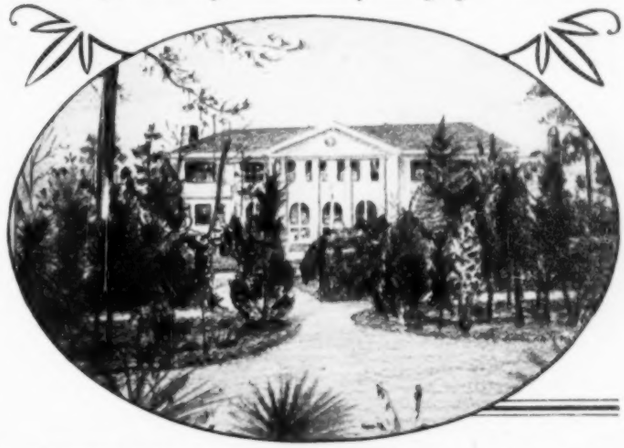
AMSTERDAM BERLIN

For Sale

THISTLE DHU

Show Place of Pinehurst, N.C.

with famous pitch and putt golf course



THISTLE DHU, famous estate of the late James Barber is for sale. It lies in the heart of the healthful and beautiful Pine Belt in fashionable Pinehurst, N. C.

The property includes the magnificent Barber mansion illustrated, and described at right; landscaped grounds, dotted with lovely old pine trees and formal flower gardens; and the Thistle Dhu golf course, perhaps the best known small golf course in the country, of which the *American Golfer* has written:

"The golf course at Thistle Dhu is of 18 holes. It is one hundred yards out and one hundred and one-third yards in. Par is 20-21-41. The course record is 28 and it is in no danger from you... It is most interesting and entertaining, calling for a delicate and expert touch in the short game as evolved in pitching and putting ... you will come away chastened."

For sportsman, out-of-doorman, etc., Thistle Dhu offers a sumptuous, entertaining, and interesting winter home. Brokers fully protected. Inquiries should be addressed to the Estate of James Barber, Room 2960, 120 Broadway, New York City.

A View of the Colonial Mansion; suggesting the beauty of the setting. Within, completely furnished, is the main floor containing entrance hall, living room, card room and sun parlor (with lavatory, dining room, kitchen, butler's pantry, large servant's quarters.) The second floor contains eight bedrooms with six baths, glassed-in sun porch, generous closets. In the basement is the billiard room with two tables, card room, lavatory, closets, boiler room for steam heating, laundry, etc.

FOR SALE *or* RENT IN PINEHURST

Other properties of the late James Barber

For sale or rent: Cottages for large or small families. For sale: 2,000 acres of hilly land suited to hotel or country club, with hunting preserve and lakes. Building lots in Pinehurst and Southern Pines also for sale.

Splitting a Hair

IS A WHOLE LOT EASIER

than making a Gelatin Capsule

Because 1/1000 of an inch is the limit of variation, and a few extra drops of water in the air may spoil the whole batch, Eli Lilly & Company depend for their success on Manufactured Weather

THE innocent-looking little *capsule* that measures your prescription off into so many doses involves one of the most delicate manufacturing processes in the world.

Only five or six companies attempt to make *them* at all. Even these never used to operate in the summer, and their success in winter was hazardous—until Manufactured Weather came along.

The trouble begins with the gelatin itself—sticky, temperamental stuff that reacts to tiny amounts of moisture in the air like a blotter to wet ink. The next difficulty is the thinness of the capsule wall—3½ to 5 thousandths of an inch. One thousandth of an inch is the greatest variation permitted. Otherwise the capsule cup and cap won't fit.

The capsules are molded on bronze pins dipped into the gelatin. And here is another hurdle for the harassed capsule-maker to leap. Let the temperature of these pins vary more than one or two degrees Fahrenheit, and the gelatin becomes too thick or too watery.

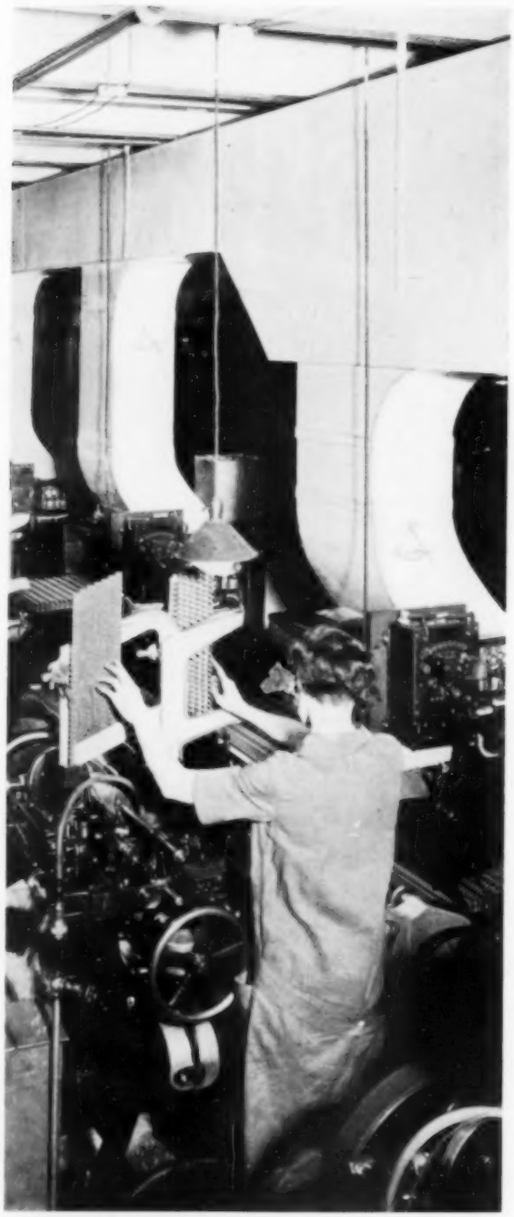
As if this isn't already enough, the moisture content of the air must not vary more than 1/28,000 of a pound per cubic foot! For good measure, gelatin picks up dust more easily than a vacuum cleaner, so that the air must be at least 99 44/100% pure.

With Manufactured Weather, every one of these precise requirements is filled, and nearly every capsule is perfect, winter and summer, despite the whimsical gelatin.

Another result of Manufactured Weather in the Lilly plant is an unusually low labor turnover, because working conditions are so comfortable the year round.

Capsule-making is but one of many industrial uses of Manufactured Weather. Wherever moisture-sensitive (hygroscopic) materials are found—in textile mills, candy factories and food plants—you'll find Manufactured Weather producing the exact conditions of temperature, humidity and air motion demanded. Today there are more than 3,000 installations of Manufactured Weather in more than 200 types of industries.

We shall be glad to furnish you with further details about the use of Manufactured Weather in your business, whether it be for conditioning processes or products or for creating ideal conditions of personal comfort. We suggest that you drop a line to our Newark office today.



NOTHING BUT TROUBLE used to be the story of capsule-making. But now they can be turned out in definite quantity production, more alike than peas in a pod, since Manufactured Weather stepped in to keep temperature and humidity constant.

●

ONE THOUSANDTH OF AN INCH isn't much leeway. But that's all that can be allowed. Largest capsule wall is only 5/1000 of an inch thick, and smallest is 3½/1000.

Carrier Engineering Corporation

NEWARK, NEW JERSEY

OFFICES: New York, Philadelphia, Boston, Chicago, Cleveland, Washington, Detroit, Dallas, Los Angeles

EXPORT DIVISION: 505 Fifth Avenue, New York

CARRIER ENGINEERING CO., LTD.
LONDON, PARIS, BOMBAY, CALCUTTA, JOHANNESBURG

CARRIER LUFTTECHNISCHE GESELLSCHAFT
STUTTGART, BERLIN

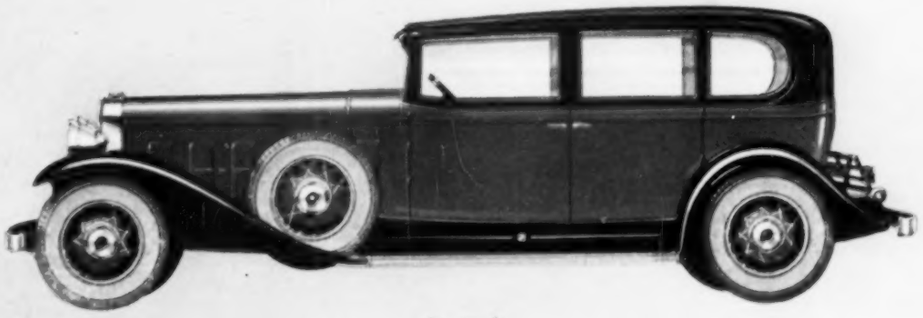
Manufactured Weather *makes* "Every day a *good* day"

TWELVE CYLINDERS

The new Cadillac V-12 is powered with an engine of the same type as the Cadillac V-16 —in fact, a duplicate of this engine in pattern and appearance, but having twelve instead of sixteen cylinders. Coachwork and interiors of rare beauty by Fisher and Fleetwood

Ten body styles; wheelbase 140-143 inches. Prices from $3795 to $4595, f. o. b. Detroit

CADILLAC MOTOR CAR COMPANY · DIVISION OF GENERAL MOTORS



PRECISION

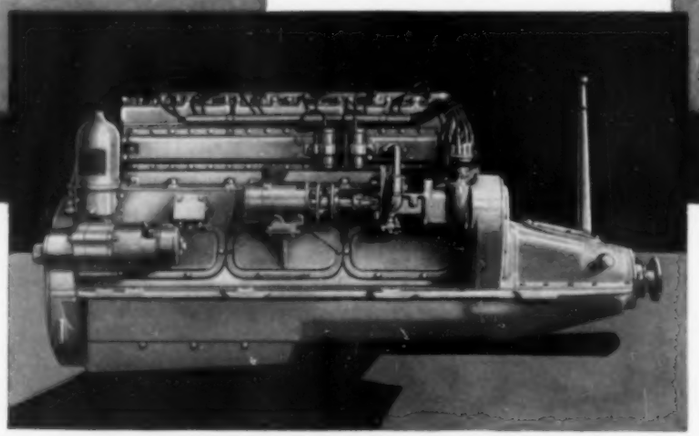
Sterling
THE ENGINE OF REFINEMENT

Precision in Sterling engines is attained, not by the speediest production methods, which this company has always maintained cannot produce full load engines of reliability, but by machining to closest tolerances, and then accurately fitting by hand. Main bearings, for instance, are line reamed by machine; then "blued" in by the original hand process. Pistons are slowly machined that the ring grooves shall be concentric and devoid of any inaccuracies. Cylinders are honed, one at a time, to micrometer exactness.

Building Sterling Petrel engines to their present leading status has required 4 years. They graduate into 1931 without a single mechanical change; unmatchable

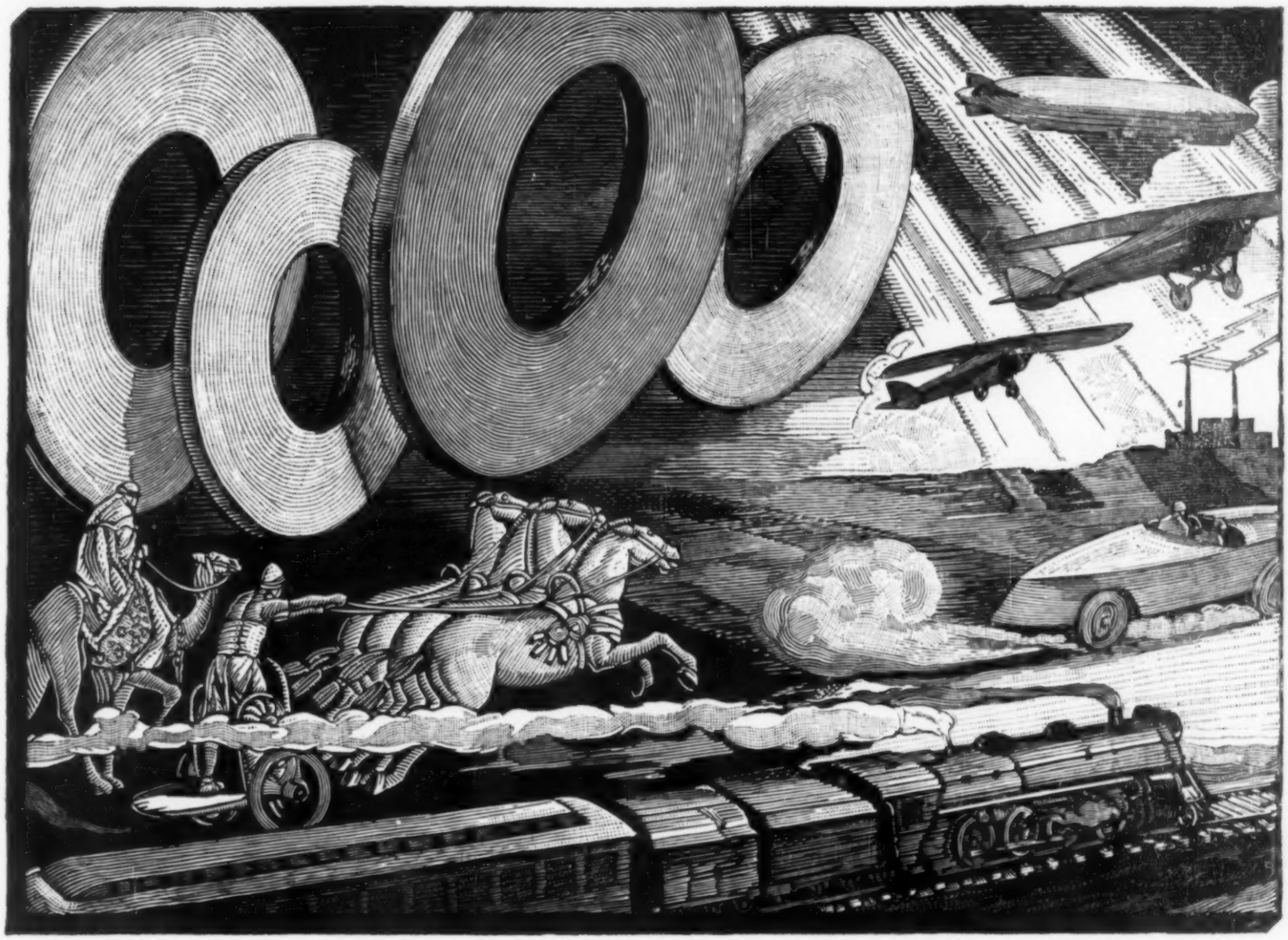
in developing 200 H. P. at 2000 R. P. M.,
in power at a safe engine speed,
in turning the larger propeller,
in possessing the only 7 bearing crankshaft that is fully counter-weighted and in true dynamic balance
and in being
safely and economically carbureted.

STERLING ENGINE COMPANY
1270 Niagara Street
Buffalo, New York, U. S. A.



W. H. Moreton Corp., 1043 Commonwealth Ave., distributors, Boston

Bruns, Kimball & Co., 5th Ave. at 15th St., distributors, New York



SPEED — On the ancient Egyptian desert — the Camel.

SPEED — In the Roman amphitheatre — the Chariot.

SPEED — Today — machines that work precisely.

SPEED — In this machine age — almost frictionless . . . .

SPEED — High speed production with split-hair precision means *grinding* — grinding wheels, grinding machines — NORTON.

NORTON COMPANY, *Worcester, Mass.*

NORTON — Grinding Wheels . . Abrasives for Polishing . Pulpstones . . . Floor and Stair Tile
Grinding and Lapping Machines . Refractories . . Porous Plates . Abrasive Aggregate

The New York Trust Company

Capital, Surplus and Undivided Profits $48,000,000

TRUSTEES

Frederic W. Allen	Lee, Higginson & Company
Arthur M. Anderson	J. P. Morgan & Company
Mortimer N. Buckner	Chairman of the Board
James C. Colgate	James B. Colgate & Company
Alfred A. Cook	Cook, Nathan & Lehman
William F. Cutler	American Brake Shoe & Fdy. Co.
Francis B. Davis, Jr.	United States Rubber Company
Harry P. Davison	J. P. Morgan & Company
Robert W. De Forest	De Forest Brothers
George Doubleday	Ingersoll-Rand Company
Russell H. Dunham	Hercules Powder Company
Samuel H. Fisher	New York
John A. Garver	Shearman & Sterling
Artemus L. Gates	President
Harvey D. Gibson	Chairman, Executive Committee
Charles Hayden	Hayden, Stone & Company
F. N. Hoffstot	Pressed Steel Car Company
Walter Jennings	New York
Darwin P. Kingsley	New York Life Insurance Co.
Edward E. Loomis	Lehigh Valley Railroad Co.
Robert A. Lovett	Brown Brothers & Company
Howard W. Maxwell	Atlas Portland Cement Company
Edward S. Moore	New York
Grayson M.-P. Murphy	G. M.-P. Murphy & Company
Harry T. Peters	New York
Dean Sage	Zabriskie, Sage, Gray & Todd
Louis Stewart, Sr.	New York
Vanderbilt Webb	Murray, Aldrich & Webb

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100 BROADWAY

40TH STREET AND MADISON AVENUE 57TH STREET AND FIFTH AVENUE

Net Profits Increased 101.7%

MAJOR PART OF INCREASE ACHIEVED IN 1930

26 Sets of Local Copy Used

BECAUSE their fiscal year ran from July 1, 1929 to June 30, 1930, one might infer that the increase in earnings of this Company—a leader in the farm supplies industry, occurred before the slump. Such was not the case. 70% of the year's volume and 80% of the profit came in the first half of 1930.

In a letter to his sales organization, the President discusses the progress made. An excerpt from his letter follows:

"The annual Report of this Company has just been mailed . . . It shows that in the fiscal year just closed your Company made a substantial improvement in earnings . . . But progress imposes responsibilities; there is no standing still, we must go forward or . . . backward . . . So, in thanking our salesmen for their work last season, I want to emphasize with all the force . . . that it will be fatal for any of us to depend upon the good work done last year to do this year's job . . . Your management will try to set the pace by giving you the proper tools to work with. I want to sketch these briefly:

"1. The basis of progress is the quality of our product. You are assured of having the best product that modern science and careful manufacturing can produce. I state this not in a spirit of boasting, but simply as a well-earned tribute to our manufacturing and technical departments . . .

"2. This year we shall make available . . . the results of a thoroughly organized marketing program based upon two years of . . . study. We want your enthusiastic co-operation in using these plans to improve your own work.

"3. You are assured of the continuance of advertising support which is unique in its selling force . . . "

The factors behind the Company's progress which are here enumerated precede the reference to advertising. And rightly so.

What was the advertising problem? In 1928, when we began to share in the work, the Company's advertising consisted of standardized advertisements. Copy used in one state was used in another.

If we assume that a *general appeal* was sound, this advertising was excellent. But an analysis of the situation revealed that a general appeal was weak. Conditions varied from section to section. Remarkable results achieved by a farmer in one district were ignored by a farmer in another, where conditions were different. This was one phase of the problem. Others were the relationship of the salesman and the dealer to the farmer. One copy plan must appeal to all.

The answer was found in the use of *local news*. The country was divided into 26 zones. Advertisements showed in definite amounts how local farmers cut costs and increased profits.

In each of the 26 zones, farmers saw pictures of men they either knew or knew about, pictures of crops their neighbors sold, headlines that led them into copy which won their confidence and made them want the right "supplies." The day of generalities was gone.

We prepare 26 times as many advertisements as were used in 1927. Farmers who read these items of local news order by brand, just as women do in purchasing cosmetics and groceries.

Dealers have discovered that it pays them to tie-in with this copy. Salesmen have learned that this advertising helps them increase their orders; they see the copy work.

The cost of preparing such advertising is of course greater than before. Thus the client pays us considerably more than was paid to the former agency. *But the effectiveness of his appropriation has been doubled or trebled.*

THIS whole program is an example of the working of the Cowan & Dengler Fee System.

On this same account, we have planned and prepared direct mail campaigns totaling $600,000, all on the 26-zone basis. Under our Fee System there is no prejudice against *non-commissionable* or low-profit mediums.

We will be glad to send executives or bankers a memorandum describing the Fee System which contributed to such results.

COWAN & DENGLER

ADVERTISING • MERCHANDISING • SALES COUNSEL

NEW YORK

EMPIRE STATE—world's largest office building—between Grand Central and Pennsylvania Terminals—an internationally famous site—the logical address for New York City offices

EMPIRE STATE

FIFTH AVENUE AT 34th STREET, NEW YORK

OFFICERS

ROBERT C. BROWN, *Vice President & Treasurer* — ALFRED E. SMITH, *President* — J. HOLLOWAY TARRY, *Secretary*

DIRECTORS

PIERRE S. DUPONT — MICHAEL FRIEDSAM — AUGUST HECKSCHER — ALFRED E. SMITH — JOHN J. RASKOB — ELLIS P. EARLE — LOUIS G. KAUFMAN

READY FOR MAY 1931 OCCUPANCY

For Rental Information Inquire
H. Hamilton Weber, rental manager, or your own broker

THE READYSET TRAVELER

From the unbeaten track . . . from the originality of stylists and camera designers, comes the Readyset Traveler —unquestionably the most outstanding and practical innovation in camera creation of this beauty-conscious day.

In its distinctive specially-woven repp covering, colorful striping, platinum finish, and mechanical rightness there is a cosmopolitan air . . . an expression of the modern spirit that appeals to all who travel—at home or afar. For the Traveler looks like custom-made luggage . . . and *is* luggage—luggage to pack full of pictures.

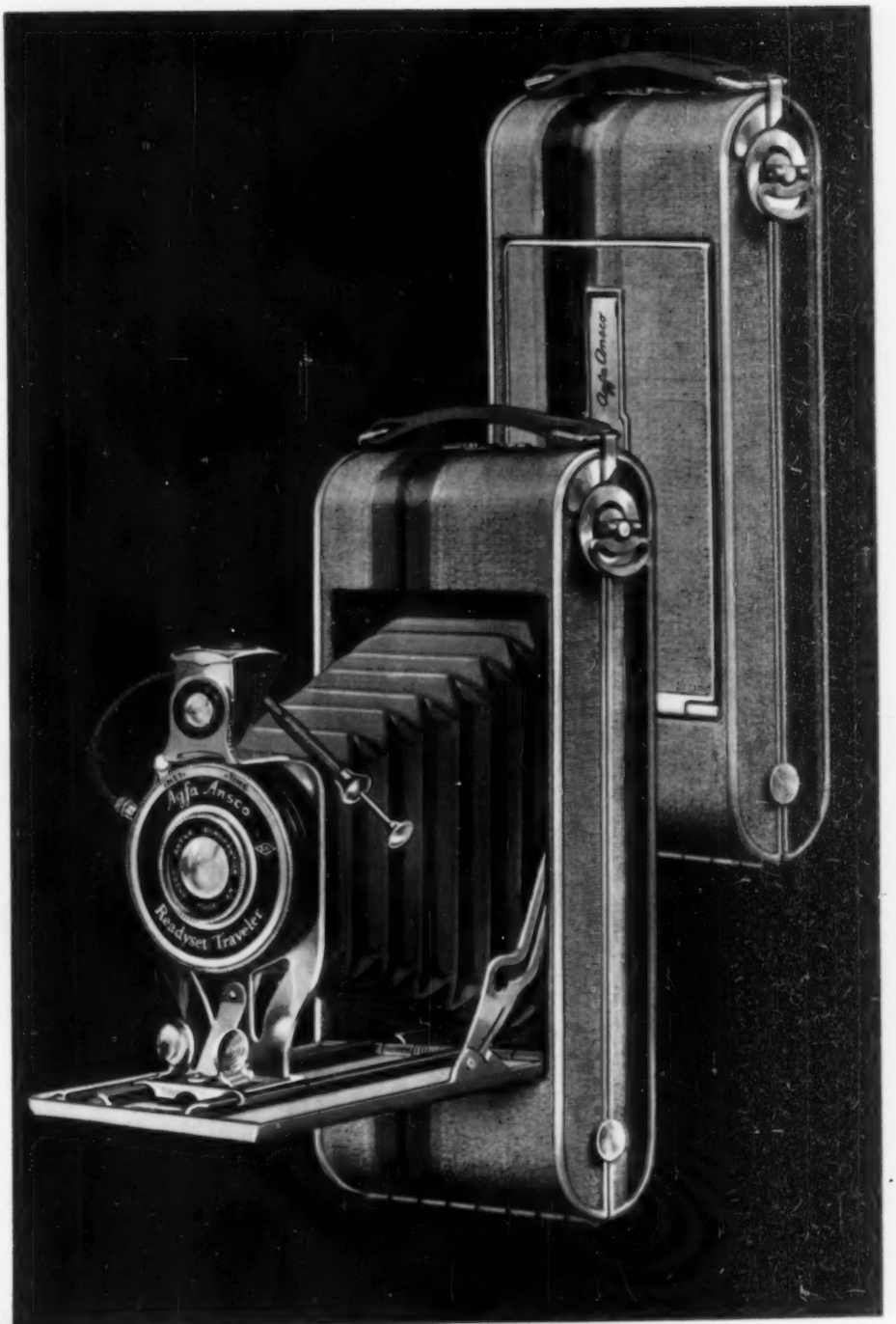
The Traveler is a certified picture-taker. One you can count on for clear sharp pictures always.

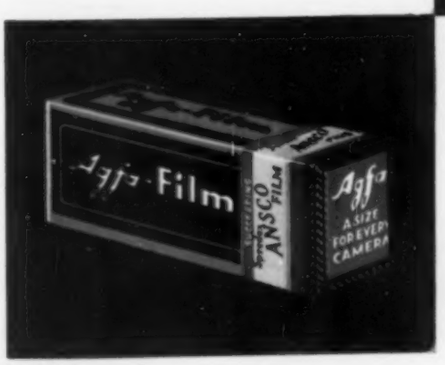
You'll be proud to own, or give as a gift, the colorful, smart Traveler. For the thrill of its possession is surpassed only by the delight in its remarkable picture-taking ability. Ask to see it when you buy your next roll of film.

No. 1 Readyset Traveler—$13.00
(2¼ x 3¼ Pictures)

No. 1A Readyset Traveler—$16.00
(2½ x 4¼ Pictures)

Available
in four different color stripings





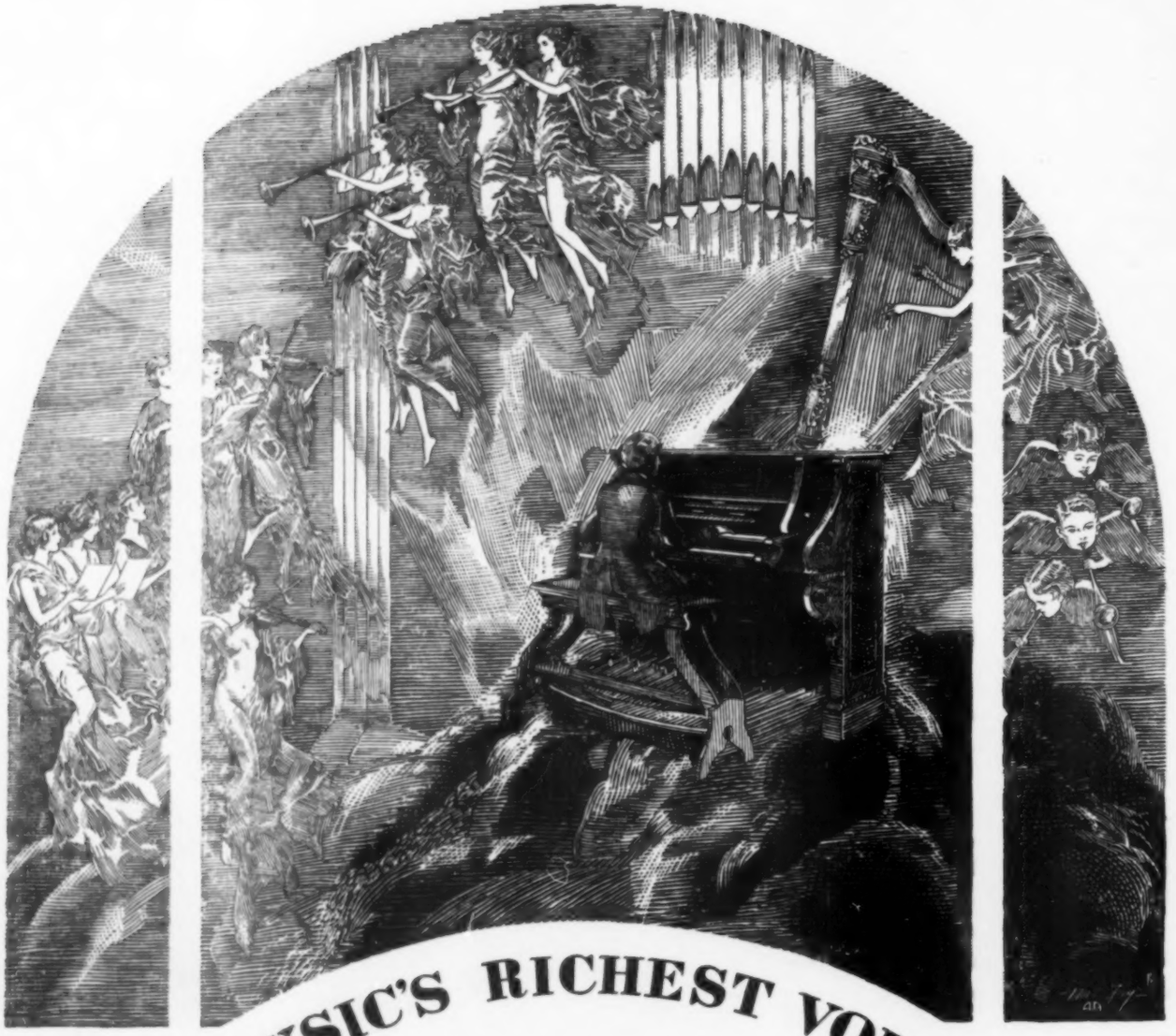
And the Traveler is one of the famous Agfa Ansco Readyset cameras . . . as nearly automatic as cameras can be and yet insure perfect pictures. No focusing, no shutter adjustments—just "Open, aim, shoot." As simple as that.

Agfa film—*the all-weather film*—takes good pictures anywhere . . . under the sun, or under a cloud. A size for every camera.

READYSET TRAVELER

BY AGFA ANSCO

AGFA ANSCO OF BINGHAMTON, N. Y.
Agfa Ansco Ltd., 204 King Street East, Toronto, Ont.



MUSIC'S RICHEST VOICE AWAITS YOU

There's a voice in organ music . . . now a vibrant, rolling grandeur . . . now a whisper, filled with color . . . now a throbbing silence. To your home the Wurlitzer Residence Pipe Organ brings this glowing, living beauty.

The loveliest melodies man has made will thrill you as you play them, charming the hours when home means most. Or you may, at the mere touch of a button, flood your home with perfect reproductions of the whole glorious range of music, interpreted by artists for you, your family, and your friends. This modern instrument requires little space . . . and never before has a superb residence organ of its quality been available at such a moderate price.

You are invited to hear, and to play, this pipe organ at your nearest Wurlitzer Studio . . . New York, Buffalo, Chicago, Cincinnati, Cleveland, Los Angeles, Pittsburgh, or Detroit.

The price — $6500 and upward

WURLITZER
Reproducing
Residence Pipe Organ

A beautiful brochure, with photographs of installations, may be obtained from any Wurlitzer store.

©1930 WURLITZER

Successful Advertisers Need Today

the Gifted Product

. . . even more than the Gifted Pen

AN ADVERTISEMENT TO THE MANUFACTURER SEEKING AN *ADVERTISING AND SALES EXECUTIVE* WHO CAN PUT IDEAS INTO GOODS AS WELL AS INTO WORDS

A year ago the coffee business was in the advertising doldrums. Nothing new had happened for months. Then someone thought of "dated coffee" in connection with the Standard Brands trucking system. And Chase & Sanborn stepped into the spotlight.

Its advertising took on the breath of life. Sales increased 400%. *A gifted product had preceded the gifted pen!*

• • •

Another "gifted product" idea two years ago licked the worst competitive problem in the history of the American watch business. Facing a bitter price war against flashy but undependable immigrant watches, Elgin went to Paris. Asked famous couturiers to design and sponsor an ultra-smart array of moderate-priced women's watches. And the sales of the new line started mountain-climbing.

All credit to the brilliant advertising writer who presented the "Elgin Parisiennes." But the idea began with *the man behind the man behind the pen!*

• • •

The writer of this advertisement thinks that writing copy *into* a product is more important today than writing copy *about* it.

He believes that during the next few years some of the keenest men in the advertising business—professionally trained advertising men—are going to start mapping out advertising campaigns *in the factory* by putting ideas into goods. Laboring at the source rather than at the outlet of advertising ideas. Feeding news into the product while the advertising agency gives it expression.

With any manufacturer who is thinking in these terms this man is seeking an interview.

For the last three years he has been an executive on the staff of one of the largest New York advertising agencies. He is leaving with the full confidence of the principals of this agency to seek a new opportunity in his chosen field.

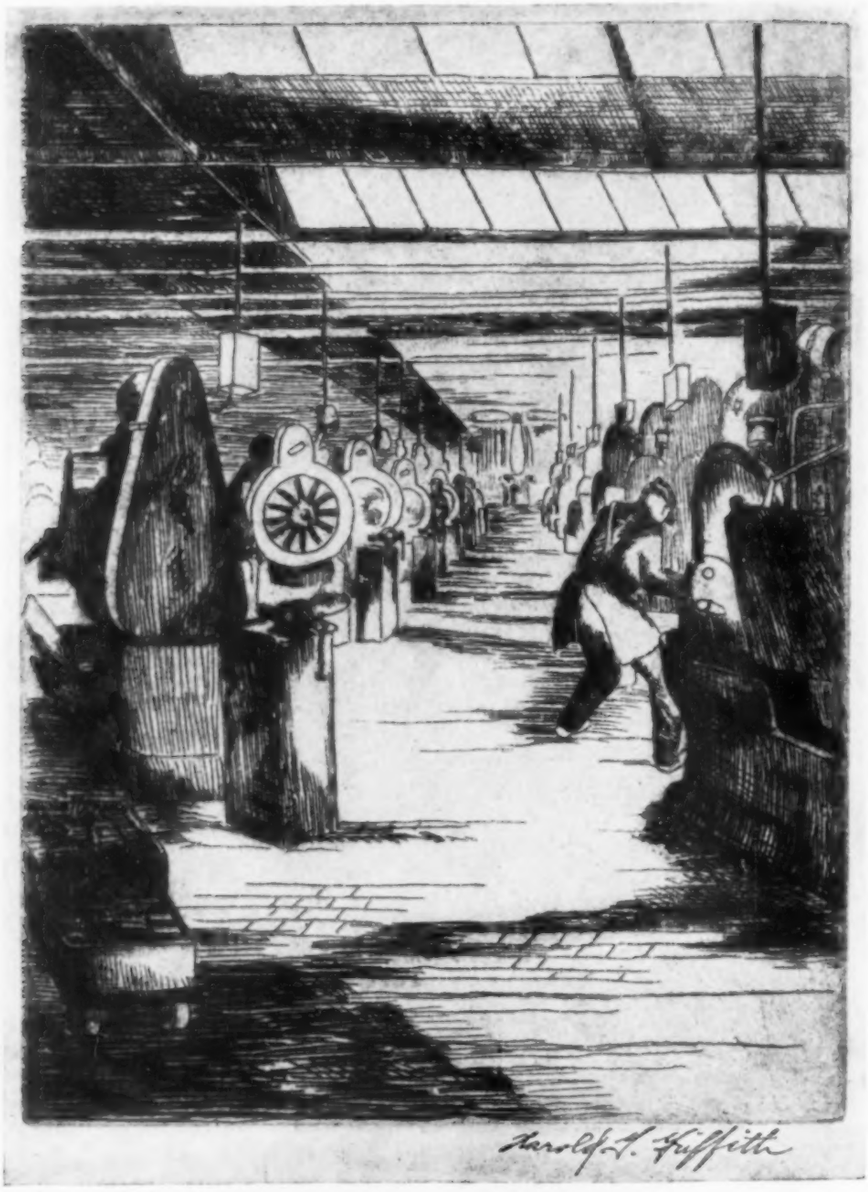
• • •

The position this man seeks may have any one of a dozen titles—or none at all. He may find his opportunity as a sales or advertising manager. Or possibly his greatest usefulness would be as an assistant to the head of the business, running an idea-laboratory for the development of new sales and advertising themes. And adding his technical experience to the direction of advertising policies.

This man would enjoy a talk with any manufacturer who is interested in this subject, whether or not he is now seeking a new executive.

• *HE CAN BE REACHED BY ADDRESSING* "BOX 17," FORTUNE MAGAZINE

IF YOU WANT LOWER COSTS



CLEVELAND asks the business man seeking lower operating costs to check any other location item by item with this city. In such cost items as raw materials, electric power, fuel and labor per unit produced, the economies of the Cleveland location are often decisive. Cleveland also offers important transportation and sales economies. Relocation here may relieve a business from serious handicaps and reverse an unfavorable profit trend.

¶ This Bank has prepared a blank which facilitates comparison of the Cleveland district with your present or proposed location in ten prime particulars. Copy of this blank will be sent on request.

GUARDIAN TRUST COMPANY

CLEVELAND, OHIO

RESOURCES MORE THAN $165,000,000

©G.T.Co.

Office of John M. De Voe, President, U. S. Tobacco Co.

This Matter of Better Offices

Contrasting those of yesterday with the work of the William F. Wholey Company, we find vision—experience—skill, as the ingredients of successful modern office design.

CONTRAST today's executive office with that of twenty years ago, or even ten.

What do we find as yesterday's ideal? Green velvet carpet, red mahogany desk—uncompromising—with massive chairs to match; polished cuspidor, and equally polished square brass feet on everything. Efficiency ruled. Standardization was glorified. No room for individualism.

Then something happened. A young furniture salesman discovered that an office was after all a *room:* that it was not just occupied but *lived in!*

Why shouldn't an executive's office be made as livable as his study at home? No reason except that "it hadn't been done." So Mr. Wholey started to make converts of a few corporation officers, bankers, and men in the professions.

Visitors in these first offices, decorated and furnished by Wholey, were quick to sense the soothing effect on nerves and disposition, the easier concentration, clearer thinking, quicker "meeting of minds", gained through these happier, quieter, more human surroundings.

Slowly at first, then ever accelerating, grew the demand for better offices as a business investment. The Wholey organization have maintained the lead in their field by knowing business and its needs, as well as period design and color harmonies.

Before a "client's sketch" (such as is reproduced above) is even roughly projected, an analysis is made of the business, the man, his position, responsibilities, and the types of visitors he will receive, as well as the physical layout of floor space.

Only then, is a decorative scheme adopted and a sketch submitted for approval. Wholey execution is as thorough as their planning and includes, under unified control, construction and decoration, selection of floor coverings, lighting fixtures and furniture—transforming bare walls and ugly beams into offices that reflect the personalities of its occupants and add inspiration to their work.

Details of this service, which has revolutionized taste in offices, and specific recommendations are gladly explained to any FORTUNE subscriber, without obligation. The William F. Wholey Company, Inc., 11 East 36th Street, New York.

COROC

IN FINEST RADIOS, BEAUTY OF TONE IS MATCHED BY BEAUTY OF APPEARANCE WITH

COROC IS THE TRADE-NAME OF A VARIETY OF FINISHES FOR SPECIFIC USES, PLEDGED ALWAYS TO DO EXACTING JOBS PERFECTLY... AND ECONOMICALLY

COROC RADIO FINISH

SUPERIOR QUALITY—BOTH IN APPEARANCE AND DURABILITY—IS ACHIEVED SIMULTANEOUSLY WITH ECONOMY of PRODUCTION

DEEP lustrous, richly-warm, more permanently beautiful protective finishes are accompanied by less delay between sealing and finishing coats, less tedious and less costly surfacing and quicker-to-pack cabinets. For the automobile industry, for aviation, for refrigerator manufacturers, for accident-free floors, and for many other uses, COOK'S COROC finishes are providing definite improvements and economies, as can be readily demonstrated. Manufacturers are invited to consult us, without obligation, about their own specific finishing problems.

COOK PAINT & VARNISH COMPANY

FACTORIES IN CINCINNATI, DETROIT, ST. LOUIS, KANSAS CITY, HOUSTON AND FORT WORTH

BRANCHES IN PRINCIPAL CITIES

New!—even to those who "have everything"
THE GRUEN CARRÉ
At a touch of the button, this unusual new Gruen discloses the time. When open it sits upright. For men and women, in white or coin gold finish, or smart leather coverings, $55 to $65

To this old guild craftsman, too, *inner* quality was the true measure of watch value

CHOOSE the watch of *inner* quality . . modern style . . honest price!

Three new Gruen timekeeping Baguettes, and a new Gruen Quadron. At top—Longueville, *8 diamonds set in 14 kt. solid white gold, tubular gold cord, 17-jewel movement, $275; second*—Lille, *14 kt. satin finish solid gold, silk cord, 17-jewels, $115; third*—Normandie, *smart tailored design, solid gold, 17-jewels, $85; below*—Dartmouth, *Gruen Quadron, 17-jewel* PRECISION *rectangular movement, with adjustable link band, $85*

FOR the one who heads your Christmas list—the gift of a beautiful watch. But do not choose for beauty alone. Look deeper for that rarer thing—for *inner* quality.

In a Gruen Guild Watch—all the beauty you could wish! The beauty of *true gold*—not the cheap hardware metal that masquerades as gold.

Beauty of design, too. For the Gruen Guild has always led in design. They were first to make an accurate thin watch, first to introduce the wrist watch into America.

But this beauty is more than case deep. It marks an *inner* quality born of guild craftsmanship; a skill, a passion for accuracy inherited from the old guild masters.

PRECISION
Trade Mark Reg.

This Gruen pledge mark is placed only on watches of higher accuracy, finer quality and finish—none less than $65

For the finest *of watches, look for the mark* PRECISION *on the dial*

That is the essence today, as for centuries, of Guild craftsmanship. That is why Gruen timekeeping is almost uncanny in its accuracy, as proved by observatory tests, and by actual timekeeping service among hundreds of thousands of men and women.

That is why Gruen Watches are never cheapened to meet a price, but are built to exacting standards of *inner* quality that uphold the finest Guild traditions. When you give a Gruen Guild Watch, you are giving the greatest value your money can buy.

Go to the Gruen Jeweler nearest you, who displays on his window the Guild Emblem shown below. This emblem appears only on the store windows of *professional* jewelers, those who put quality and honest prices above "get-rich-quick" profits.

Ask to see the watches shown here and many other fine Gruen Guild creations priced from $27.50 to $3500.

Gruen Watch Makers Guild, Time Hill, Cincinnati, U. S. A. Largest manufacturers of fine watches exclusively—engaged in the art of fine watchmaking for more than half a century. Branches in various parts of the world.

Listed in the Classified Telephone Directories of the larger cities under "Gruen Guild Watches" is the name of your nearest Gruen Jeweler. His store is marked by this Gruen Service Emblem

GRUEN GUILD WATCHES

Off the Record

The Unsinkable

THE city of Denver, Colorado, delights to pay homage to its own particular goddess, The Unsinkable Mrs. Brown. As legendary as Paul Bunyan but as real as Pikes Peak, she is a lambent flame in the Denver consciousness. Or a forest fire. She has swept through Colorado life since the early days of Leadville and Cripple Creek, pushing her less dynamic husband into prominence, opulence, and a degree of mystification which he escaped only in death, a little over a decade ago.

No one, it appears, knows the Christian name of The Unsinkable Mrs. Brown. Her signature is always Mrs. J. J. Brown, commemorating a personality practically forgotten except as her husband. He was never known as J. J. anyway. Leadville Johnny was his name, discoverer and exploiter of the Little Johnny mine, which produced some $10,000,000 worth of silver. Leadville Johnny was likable and easy-going. Those who remember him doubt if the $10,000,000 would have lasted long without the capable management of The Unsinkable. Leadville knew her as the boss of the Little Johnny, and when in later years they moved to the Brown Palace in Denver (named for no relation of Leadville Johnny), they put on a great show.

From the most dramatic episode of her career she emerged with her sobriquet. She was a passenger on the *Titanic*. When things happen, she is almost certain to be there. Someone, panic-stricken, nearly succeeded in stampeding the passengers. But Mrs. Brown raised her voice (Colonel Paddock of Boulder says it is one of the heartiest voices he ever heard) and laughed the hopeless fellow out of countenance. "There's no danger," she shouted, although she knew very well that the boat was going down. "It simply can't go down, because I'm on it and I'm unsinkable." She continued her banter while the lifeboats were being loaded and was among the last to accept a place in the last boat of all to be launched.

The heroic personality of The Unsinkable has also some impressive cultural aspects. She is in a fair way to become the Lorenzo de' Medici, or rather the Mrs. Jack Gardner of Denver. Already she has made Eugene Field's old home into a children's library, and now she is arranging to turn her own home on Pennsylvania Avenue into an art museum for the city. "I plan to copy as nearly as possible after the Beaux Arts of Paris," she declares. "My dear friend, the Duchesse de Vendôme, lives next door, you know, and I often see the old building from her windows. I love it." The principal exhibit in the museum will be a collection of the Comtesse de Noailles' poems, every volume a first edition presented by the Comtesse to Mrs. Brown, who now lives in the de Noailles' palace. Of late Mrs. Brown has added to her already considerable Parisian renown by her interpretations of Sarah Bernhardt. She gave her first Bernhardt rôles under the auspices of the Duchesse de Vendôme. "It was a curious thing," she later observed, "but soon after, I went to a fortune teller here in Paris who told me that I am the reincarnation of a famous spirit now residing in Père Lachaise,

MRS. J. J. BROWN

the French cemetery where Bernhardt lies. I was so excited, I walked right out of the place and left my sable on a chair."

She is often accused of being a grandstander, but those who know her best insist that it is unconscious. She is notably generous and is guided in her philanthropies only by her emotions. She gives freely when it appeals to her, and that is the end of it. And her giving is usually just because she thinks the recipient would like it. Just before the British set out for America to challenge the *Enterprise*, The Unsinkable Mrs. Brown sent The Unsinkable Sir Thomas a "Colorado shamrock" as a lucky piece to wear during the races and was thus many weeks in advance of Will Rogers in showing the "world's best loser" that he had supporters in America.

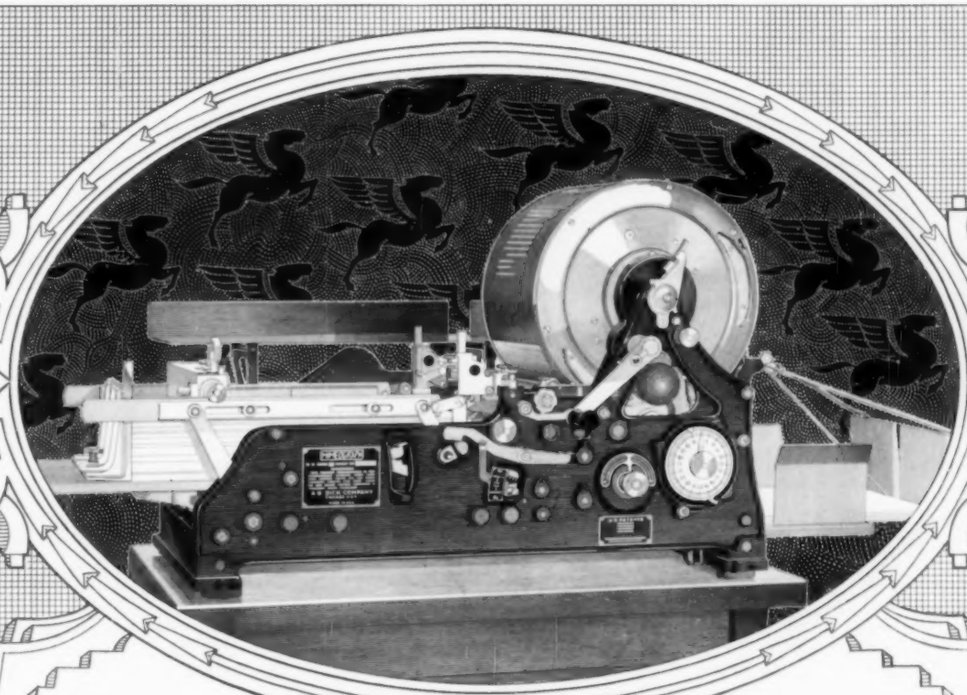
Spider and Tooth Tree

FROM their homes which line both sides of Forest Street in South Manchester, Connecticut, each year on Thanksgiving, Howell and Frank and Richard and Horace and Clifford Cheney with their families, and Russell and Philip and Mrs. Helen Bayne (who was a Cheney—Knight Dexter's daughter) converge upon Cheney Hall on Hartford Road. There they meet the Cheneys from Hartford Road: Frank Jr., George, Mary, Robert, Marjory, Dorothy, Austin, Charles, Leslie, and Mrs. Maisie Cheney (the widow of John Davenport [Dave]). And William from his house on the corner of St. James and Park. And Mr. Harry G. Cheney from his house on Main Street.

Their purpose is that which the day orders —a family party. Cheneys have celebrated Thanksgiving annually since 1636 when John Cheney settled in Roxbury. They have been fruitful. They have multiplied. And they have replenished the earth. They have made South Manchester. They have made America's silks. And they have lived in comparative amity upon a square mile of ground for a century and a half.

From a family where the seventh son of a seventh son is not unheard of, an occasional member can be spared to politics or the arts. But broadly speaking, since the day when George's eight sons began manufacturing sewing silk in 1838, all Cheneys have gone into Cheney Brothers' silk mills. Colonel Louis Rickmond Cheney, leading citizen and one-time mayor of Hartford, is an exception. The late H. Bushnell Cheney, whose head devised and whose Ford transported the Jitney Players, was another. But most Cheneys go to public school (Cheneys built it) in South Manchester, then to Yale (nine have been tapped for Skull and Bones), finally return to Cheney Brothers' offices (down the road from Cheney Hall) on Hartford Road, and go to work. Of the seven company directors, seven are Cheneys. Of the company's six divisions of "horizontal control," five are headed by Cheneys. (The sales head was imported from New York in 1927.) FORTUNE will discuss Cheney Brothers and their relation to the silk industry in a later issue.

Recent years have seen some recessions from the paternalistic position once boldly assumed and vigorously maintained. Many a Cheney non-silk subsidiary, such as gas, traction, and sewer systems, has been sold in whole or in part to the town of Manchester or to public service companies. The schools have been relinquished also. And rayon, at first denied inclusion in the Cheney Brothers' scheme of silken things, has been admitted. But the Cheney Thanksgiving party, the apotheosis of the Pilgrim Fathers' most universally adopted idea, goes on like Hop Brook and will go on, presumably, like the



UNIQUE SPEED

Pegasus without wings would have been just another horse. It's the Mimeograph's capacity for great speed that makes it a unique modern achievement. The whole Mimeograph process is geared for quick action. Near at hand, always ready for instant service, by this means inspiration and fulfillment are never far apart. Write or dictate the word and thousands of duplicates may be had within a few minutes—neat, clean duplicates of anything written, typewritten, or drawn in line. This newest model combines stand and machine in a single unit, takes a whole ream of impression paper at one time, and has many other betterments. And it delivers its bulletins, letters, charts, illustrated broadsides, etc., with even greater dispatch than ever before. Working cost is extremely low, control so simple that anyone can operate it—in the privacy of your own office. Let us demonstrate its unique ability to put speed in your work—for selling, for organization, for time and money saving. Write today to A. B. Dick Company, Chicago, or 'phone branch office in any principal city.

MIMEOGRAPH

EDISON-DICK
MIMEOGRAPH
CHICAGO

Gifts for Gentlemen

1. White crepe silk EVENING MUFFLER, imported, $15.00. Monogram A, $8.00. Monogram B, $9.00.
2. CIGARETTE CASE of hand carved Thuya wood (pocket size) $20.00.
3. ASH TRAY of Brazilian onyx with bronze figure, $30.00.

4. SMOKING JACKET of velvet with grosgrain silk lapels, imported. Blue, black and mulberry, $50.00.
5. CRYSTAL LINKS hand carved, $50.00.
6. POCKET KNIFE of sterling silver, $5.00.
7. RULER PENCIL of sterling silver, telescopic, $7.00.

8. LINEN HANDKERCHIEFS, cut out single initials embroidered in France, $2.50.
9-10. CRAVATS of rep silk from England with contrasting woven figures, $4.00.

Mail orders are given careful and prompt attention

ILLUSTRATED BOOKLET ON REQUEST

F. R. TRIPLER & CO.

MADISON AVENUE AT 46 STREET · NEW YORK

brook of copy book fame, forever. The groaning board is no figure of speech on this occasion. One may eat himself into a stupor, it is said, and not become unduly conspicuous.

After such a meal, one must do something to fight off gastric discomfort. Wherefore the entire family takes part in games which all can enjoy, notably a curiously involved one known as Black Spider. In it, one of the uncles (usually Frank D.) is sent out into the hallway where he drapes himself with as many cloaks, mufflers, *et alia*, as will cling to him, puts overshoes on his hands, mittens on his feet, and contrives by as many additional devices as are available to make his appearance grotesque and terrifying. Meanwhile, one of the Cheney aunts has been selected for the part of "mother." She names each of the forty or more children Sunday, Monday, Tuesday, and so on through the week. She calls them to her and then, selecting one child, says, "I am going to market. Now, my little Monday child, don't let Black Spider steal my little Sunday child while I am gone."

As soon as she has gone, the Black Spider comes in upon all fours. The children scream and scamper to far corners or hide under tables. But the Black Spider, like a good Royal Canadian Mounted Policeman, always gets his man. And the Sunday child is abducted.

The mother then returns and spanks the Monday child and joins in the cries of grief and desolation that attend the cruel work of the Black Spider.

During this part of the game, the Black Spider is busy making the Sunday child into a pie. Directly thereafter the mother goes to the bakery and buys the pie. When she comes to eat it, she immediately cries out, "This tastes like my little Sunday child. Go home, go home, Sunday child." By this abracadabra, the pie becomes a child again and scampers from the bakery (which is the stairway) to its original position in the group shouting, "Cats and dogs, cats and dogs!"

Then they do it all over again.

The origin of the game is as obscure as its logic. But it is played year after year among squeals of delight.

Also illogical is another Cheney family custom that centers in the Tooth Tree which grows in front of the home of the late Frank W. Cheney. For two generations each Cheney has deposited his or her baby teeth in this tree, each tooth in turn as it came out. Child by child—and tooth by tooth—they have come to the tree, taken a knife, bored a hole in the trunk, inserted the tooth and covered it with a plug of soft tar from the road if the tooth came out in the summer, or with chewing gum in winter.

Not a great while ago the Tooth Tree began to languish and turn sere. The Davey doctors were summoned, and they made their diagnosis. A major operation was indicated, said they. The rotting core of the tree and all extraneous matter would have to come out. Immediately the family was in an uproar, which was finally quieted by compromise. The operation proceeded on a modified scale. That is to say, such matter—but only such matter—as could be taken without disturbing a single tooth was removed, and the unguents customary for the treatment of trees applied.

King of Quincy

THE title of New England's oldest active golfer may well go to Theophilus King, of Quincy, Massachusetts, who at eighty-six still pursues the game. He always plays with three caddies: one to carry clubs, one to watch the ball, and one to build tees. Wreathed in billows of Bismarckian whiskers, he takes a daily drive in an ancient electric automobile chauffeured by Mrs. King, who is eighty. In his time a most eminent man of business, he still retains the presidency of many a New England corporation, notably the Granite Trust Co., whose skyscraper is one of the glories of Quincy's skyline. He uses his office there mostly to administer the King Family Fund which he established in 1912 as a means of distributing his wealth in charitable works. Among other beneficiaries of the fund are the forty-one churches of Quincy, each of which receives $100 yearly from it. Mr. King never drinks, smokes, or swears. A staunch prohibitionist, he offered a large cash prize several

STARTED!

BOULDER CANYON PROJECT and a New Era in LOS ANGELES' INDUSTRIAL GROWTH!

WITH THE DRIVING of a silver spike into a railroad tie on September 17, 1930... the continued development of the Los Angeles industrial area is guaranteed for generations to come.

Between the massive shoulders of Boulder Canyon, billions of added wealth will pour into the Southwest . . . millions of new population . . . unlimited low cost water and power. This new source of water and power will create tremendously rich new markets, besides stabilizing the phenomenal population growth disclosed by the 1930 census. And Los Angeles is assured its position as a world leader in profitable and low cost industrial production.

Secretary of the Interior, RAY LYMAN WILBUR, *said regarding the future benefits of the Boulder Canyon project:*

"It is as if our country had suddenly had a new state added to it, for the new and wider use of this controlled water will care for millions of people and create thousands of millions of wealth."

Planning your Pacific Coast plant requires consideration of the Boulder Canyon project . . . the two are inseparably welded. Foresight today promises rich rewards when this gigantic development is completed, the manufacturing importance of today's Los Angeles will be trebled in the immediate future.

Bureau of Power and Light engineers are organized to render exceptional consultation service. Upon request, a very complete survey of your water and power requirements will be made in a comprehensive, confidential report.

BUREAU OF POWER AND LIGHT
City of Los Angeles

FROM ONE MAN TO ANOTHER

In itself, the superb craftsmanship of Hermès originations in fine leather is a source of keen pleasure to discriminating men. More than that, their unmistakable air of distinction, and their internationally famous name make Hermès creations gifts of rare appreciation to the cosmopolite or sportsman.

CREATOR IN LEATHER

HERMÈS OF PARIS INC.

1 EAST 53rd STREET, NEW YORK

24 FAUBOURG, ST. HONORE, PARIS
CANNES, BIARRITZ, SAUMUR, CHANTILLY

years ago for an epithet that all good citizens could apply to those who break the Eighteenth Amendment. "Scoflaw" was the word he finally chose out of the thousands that were submitted. But Mr. King's liking for bizarre nomenclature is not limited to anti-prohibitionists: his son is named Delcevare, his daughter Zayma.

Food for Thought

IT is very probable that when the directors of General Motors meet, many of them travel to the G. M. building in New York in G. M. automobiles. It is also on record that at one important meeting of the original forty stockholders of Drug, Inc., almost all of them vigorously chewed Rexall Dyspepsia Tablets. The directors of National Dairy Products always make use of N.D.P. products at their meeting. In fact, they eat them.

It makes a very gay and sturdy scene. In summer there is complete informality, coats off, sleeves rolled, and the like. There are cold bottles of Sheffield's Grade A on the table from which President Thomas H. McInnerney takes frequent and generous gulps. There is Kraft cheese and sandwich spread and quantities of ice cream. Just outside the directors' room is a large refrigerator in case the food within the room should too quickly be consumed. Mr. Kraft may often have made an important decision between mouthfuls of a sandwich seasoned with his own mayonnaise dressing. Undoubtedly Mr. Flick of the Franklin Ice Cream Company (Kansas City) has courteously congratulated Mr. Supplee on the excellence of Supplee Ice Cream. And Mr. Hovey of the General Ice Cream Corp. (Schenectady) has promised that for the next meeting he would ship some of *his* ice cream. From all sources it is reported that the directors eat heartily and with great conviviality. It must also be a satisfaction to them to notice there are millions of people in the U. S. whose taste in dairy products so closely approximates and follows theirs.

Hats

OF THE various shops that line the first floor of 247 Park Avenue in Manhattan, that of John Cavanagh, Ltd. looks least like what it really is. Mr. Cavanagh sells hats, but so discreetly that a wanderer into his store would first believe himself in a gentlemen's club or in the great hall of a small English castle. Paneled walls stretch to the lofty white ceiling; the Cavanagh coat of arms is blazoned over the huge fireplace. It is only the second or third glance that detects the two incongruities: a small glass case containing a dozen or more hats; several gentlemen's canes and a few more hats on the carved wood table.

With so rich a decor for his commerce, it is not surprising that Mr. Cavanagh's hats and clientele are of the best. Here buy Edward F. Hutton and the Morgan partners; here is fitted Mr. John Hartford of the A. & P. The majority of Cavanagh hats are made to order. If you have once walked into the shop you can thereafter order by telephone, for Mr. Cavanagh and his invaluable store manager, Mr. List, have kept an accurate file of the size and shape of your head and of your predilections in the matter of color. Mr. Cavanagh's trade does not rely upon advertising (although occasionally a modest notice will appear). His clients have spread his fame by word of mouth, and practically all his customers know one another. Records show that the average customer (there are almost 2,000) buys three new hats a year at an average price of $50 for the three. Ordinary felt hats average from $15 to $25. Perhaps a hundred customers buy $100 Panamas a year and twenty buy the $200 Panamas.

Mr. Cavanagh's shop is unrivaled in the country, for no one else has cared to specialize only in the most expensive of the hat trade. However, Mr. Cavanagh is president of Cavanagh-Dobbs, Inc., a holding company for Dobbs & Co., through which he competes with other hatters. A thorough sportsman, Mr. Cavanagh takes greatest pleasure in the accomplishments of his sons. (Mr. Cavanagh married Agnes Garvin, sister of Mr. Francis P. Garvin.) Two of them are prominent in Yale athletics, the third, a student at the Priory School, is a member of the Fairfield Hunt.

Something luxuriously NEW

THE NATIONAL HOTEL OF CUBA

HAVANA ~ CUBA

Under the direction of
FRED STERRY, *President*
The Plaza, NEW YORK
WILL P. TAYLOR, *Manager*

When sun and amethyst seas are at their best . . . when chic Americans are leaving winter in the cold for the Paris of the tropics . . . for that brilliant moment the National Hotel has timed its opening. The Plaza and Savoy-Plaza of New York have set their duplicate in luxury on the Malecon . . . in the super-fashionable section of Havana . . . stone's throw from the very center of gaiety, yet beyond the tumult of a great city.

Seventy-five feet of palm-shaded altitude turns on cool Caribbean breezes. You dine on the smartest of terraces . . . or in a salon of silver, splashed with color-mad flowers of the tropics . . . just to remind you that this is Havana, not Monte Carlo or Cannes . . . while Paris-minded chefs lean toward the exotic in cuisine. A special brokerage office brings Wall Street into the hotel . . . and you sleep (if you can find the time) or entertain expansively in rooms of regal proportions . . . as cool as the sea itself.

OPENS DECEMBER 15 1930

And when you're not gaming at the casino or playing crack golf on palm-edged courses . . . or swimming in the private pool . . . you'll be dancing on polished parquet . . . in gatherings notable by a generous sprinkling of diplomats. In fact, the National Hotel's paraphernalia for smart-world pleasures simply cannot be exhausted. Obviously you should arrange to be in Havana this winter.

Reservations may be made at the Plaza and Savoy-Plaza, New York

Companion of Mountains

For more than a thousand miles, the majestic grandeur of Rockies and Cascades accompanies the North Coast Limited, newest of transcontinental trains, between Chicago, Twin Cities and Spokane, Portland, Tacoma, Seattle.

NORTHERN PACIFIC
YELLOWSTONE PARK LINE

Travelers to and from the Northern Pacific Coast and California enthusiastically commend the "New North Coast Limited Way." For Western travel information, address E. E. Nelson, 304 Northern Pacific Ry., St. Paul, Minn.

New North Coast Limited

CHRISTMAS RATES

(November 15th to January 1st)

One Subscription $10.00
Two Subscriptions $17.00
Three Subscriptions $25.00

Additional Subscriptions at the rate of $8.00 each

Your own subscription may be renewed at these rates

A gift of a year's subscription to

Fortune

comes to you from

_____

with the Season's Greetings

The Perfect Christmas Gift for the friend "who has everything"

The Christmas card reproduced above will announce to your friends your gift of a year's subscription to FORTUNE. The card will be mailed to arrive the day before Christmas.

Christmas gift subscriptions will be started with the January issue (Volume III, Number 1) which will also be delivered the day before Christmas.

A Gift Subscription Order Blank is bound into this issue of FORTUNE for your convenience in sending your gift list and renewing your own subscription at the special Christmas rates.

Your FORTUNE Christmas list should be mailed promptly so that the publishers may check it against FORTUNE's present list of subscribers and advise you of any possible duplication. Address FORTUNE, 350 East 22nd Street, Chicago, Illinois.

The white jade flower bowl, from the collection of Emperor Chien-lung, is dated about 1750. The candlesticks of translucent pale sea-green jadite are statuettes of the Goddess Kuan-yin.

The vase of this lamp is twenty-five inches high. On a ground of turquoise hue are painted scenes of the court of Emperor Chien-lung (1736-1795).

A pair of jade lanterns with delicately carved and pierced silver gilt mounting. The little clock is of fine, white jade. Each vase has a spray of flowers and foliage carved from semi-precious stones.

This figure of the Goddess Kuan-yin, bearing peaches of immortality and the elixir of immortal youth, is eighteen inches high, of uniform, warm, rich grass-green jadite. A jade phoenix, perfectly crowns this stately composition.

Perhaps *once in a lifetime... perhaps this very Christmas... you wish to give a gift that only a certain person will rightly prize... a gift that is more than beautiful, more than precious... that has, in fact, the quality of immortality. What happier choice than the exquisite jade carving or porcelain vase first presented three hundred years ago by a Manchu emperor to a favorite princess. Certainly a gift that has kept a memory fresh through three centuries will be a gracious reminder of a noble giver. To give the gift of an emperor, to bestow the heritage of three hundred years of pleasure, is to beautifully acknowledge the royal quality of the receiver. Edward I. Farmer will be very happy to help you select, from his famous collection of XVII Century Chinese jades and ceramics, this one perfect gift. And to partially prepare you for these wonders, may Mr. Farmer send you his Christmas Brochure... which also includes many plates of his remarkable collection of XVII and XVIII Century English furniture? Edward I. Farmer, Inc., 16 East 56th Street, New York City.*

FARMER

A group in the Christopher Wren room, part of the famous Jarmer collection of XVII and XVIII Century English furniture

For a Discriminating Clientele

To the great cartographer Mercator and his son, in Flanders, came the great navigators, kings and princes of the late sixteenth century for those charts and maps so priceless in planning exploration, or new campaigns of conquest

IN all Packard's thirty years of building fine motor cars for a discriminating clientele Packard distinction has never been more pronounced, more enviable than it is today.

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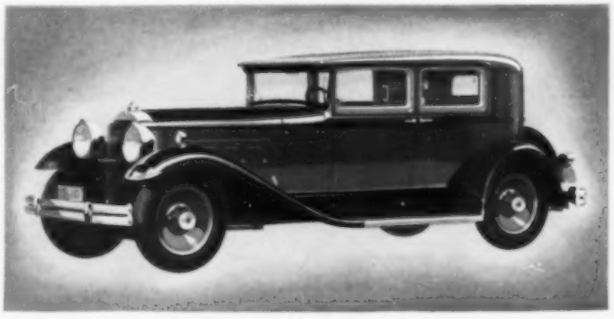
Nor is Packard Eight ownership expensive. Any Packard man can, and will be pleased to show you with detailed figures that it really costs *no more* to have a luxurious Packard Standard Eight than any other car of like size and power—if you will but follow the example of most Packard owners and keep your Packard a little longer.

You can easily find out from any Packard dealer whether *you* are paying Packard ownership costs for your present motoring. If you are, then why not enjoy Packard luxury and prestige—why not *have* the Packard you have always wanted?



PACKARD

ASK THE MAN WHO OWNS ONE

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OWEN D. YOUNG AND THE GENERAL ELECTRIC CO.—PART ONE

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by Ervine Metzl

PORTRAIT OF COLONEL SOSTHENES BEHN

CREATOR OF THE INTERNATIONAL TELEPHONE & TELEGRAPH CORPORATION
AND, TODAY, ITS INTERNATIONALLY-KNOWN CHAIRMAN

Behn Brothers

. . . was, first, the scribbled daydream of a ten-year-old boy; was, later, a banking house which dealt in sugar by design and telephones by accident; was, still later, the energizing force of one of the world's largest corporations; and was always a devoted, indestructible partnership.

A TEN-YEAR-OLD boy sat at a table scribbling. Some one strolled over and glanced at the paper. He read: "BEHN BROTHERS—SOSTHENES AND HERNAND BEHN." The boy looked up. "Hernand and I are going into business," he said.

. . .

The new century was in its swaddling clothes when Sosthenes Behn grew his beard. It was a protection rather than a gesture; his entire career seemed momentarily to hang upon it. For Sosthenes was a New York banker, the acting head, in fact, of a foreign exchange department. And he didn't look like a New York banker. Thus the beard grew, a mark of dignity and maturity. It accomplished its purpose, and its possessor was both amused and proud. The year was 1901, and Sosthenes Behn was not yet quite twenty.

. . .

Infinitely complex forces had been at work upon the boy. There was, first of all, the matter of his blood. His curious name derived from the Greek and meant "life strength"; he was born on the little West Indian island of St. Thomas; but the principal strains which coursed within him were French and Danish. Together with Hernand, he had gone to Europe to be schooled—first to Corsica and later to Paris. By birth and training, these Behns were cosmopolites. They were adepts in nearly every tongue spoken by civilized man. And deeper than their multi-linguism lay the rich mixture of their inheritance. Upon this they could draw at will, and upon it they have drawn freely throughout their lives. Than Sosthenes Behn is no Frenchman more French, no Englishman more British, no Spaniard more Spanish, and through it all, no American more American. Today, when the International Telephone & Telegraph Corporation negotiates in the world's capitals from Bucharest to Nanking, this world-sympathy and world-understanding are of incalculable value. The Behns travel incessantly. But they are never foreigners.

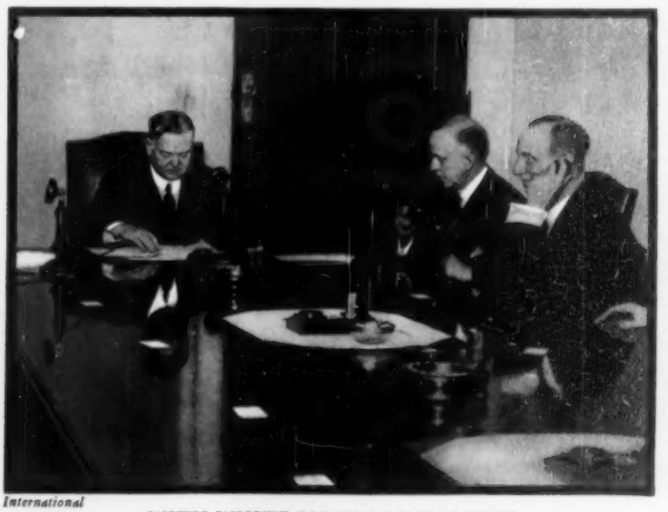
. . .

Sosthenes rather fancied the beard, and he kept it a long time. Through a trip to Mexico for a group of New York bankers, through the beginnings of his career in Porto Rico. Here, in 1906, the brothers realized their ambition. They took over their stepfather's sugar business, incorporated themselves as Behn Bros., Inc., and became successful sugar factors. As such they were favorably, but not conspicuously, known in New York. Their entrance into the communications business, which came about when the Porto Rican Telephone Company fell into their hands through a friend who had taken it in payment of a bad debt, caused no international stir. Presently, when Cuba invited them, they had two telephone systems instead of one. But when the War came, they were still bankers. Sosthenes was thirty-two, and Hernand was thirty-four. The brothers were verging on middle-age and their records, while respectable and successful enough, were not really as glittering as one might have forecast on that day in 1901.

They had double claims to American citizenship. They had sought and obtained citizenship in their own right, and the U. S. purchase of St. Thomas from Denmark automatically enfranchised them. Sosthenes did distinguished work for the Signal Corps in France, was the chief of staff for General Russell, the A. E. F.'s chief signal officer, and just before the Armistice moved to the First Army. Later, in Paris, he sat with three other colonels (including Colonel A. H. Griswold, later to become one of the Behn lieutenants

WITH POMP AND CIRCUMSTANCE

. . . in the persons, left to right, of General Anido, vice president of the Council of Ministers, King Alfonso XIII, the Papal Nuncio, U. S. Ambassador Ogden H. Hammond, and the Marqués de Urquijo did Colonel Sosthenes Behn (extreme right) attend the opening of the Spanish-American telephone service in 1928.



International

WITH WHITE HOUSE SIMPLICITY

. . . fifteen months later, was service opened over the 5,300-mile circuit between the U. S. and the Argentine, Chile, Uruguay. Between President Hoover and Colonel Behn is sitting Walter S. Gifford, president of the American Telephone & Telegraph Company.

in I. T. & T.) upon the adjustment board which liquidated the Signal Corps' European property. Both France and the U. S. decorated him.

. . .

It was in 1920 that the brothers began to move in a large way. In that year, they made their deal with A. T. & T. to lay a cable from Cuba to the mainland, connecting the growing island system with the telephones of the mainland. It had been projected before the War, and preliminary work on the mainland end had been started. But not until 1920 were the negotiations closed. This deal, which was small enough in comparison with the brothers' later operations, at the time was of the most tremendous significance. It gave them confidence. It crystallized their plans into the immediate organization of the International Telephone & Telegraph Corporation. Sosthenes and Hernand were encouraged to come to New York to look for support. The whole vast plan was set in motion.

It was to tap a deep wellspring of initiative. In Madrid, in 1924, Sosthenes battled for the Spanish concession. The Dictator and his advisers insisted that the company reconstructing Spain's telephones should also use Spanish equipment, made in Spain. Sosthenes was no manufacturer. The telephone plant in Cuba and Porto Rico had come from the large companies in the U. S. But Sosthenes signed the contract nonetheless. He went to his good friend A. T. & T.: "Will your foreign manufacturing subsidiary, International Western Electric, put up a plant in Spain and make the equipment for us?" It would not. He turned to his great competitors in Europe: "Will you make equipment for us?" They would not.

The entire Spanish deal seemed on the verge of collapse. Sosthenes pondered, had a thought, rejected it as wild, found no other alternative, formed his resolution. Again he went to his good friend A. T. & T.: "Very well, you will *sell* us International Western Electric?" Yes, they would. How much? Thirty millions. It was a staggering price for the young company, but Sosthenes paid it. In bonds which A. T. & T. turned over to J. P. Morgan & Co. Thus at one vigorous stroke, the Behns had become large manufacturers and had attached to themselves the most powerful banking support in America. And not at all by design, but because the terms of the Dictator's concession had to be met. And because of the Behn resourcefulness and the Behn daring.

. . .

Sosthenes is a tall, military figure of a man. The luxuriant beard has given way to a grayish mustache which one does not notice much. In his magnificent French oak office in the tower at Broad and Beaver streets, he is very much the American industrialist. Of tremendous energy, he also energizes others. The most noticeable quality of the I. T. & T. building is its vigor. Here are the many executives whom the Behns have gradually drawn to them. Almost without exception, their offices reflect the nervous electric energy of Sosthenes's office. The man has infused himself everywhere, whether because one likes him or because one is dominated by him. His concentration upon his work is phenomenal; he is without competing interests. And one may make an appointment to see him as easily at seven in the evening as at ten in the morning. He is sure to be still at his desk.

© Fortune

PORTRAIT OF HERNAND BEHN
PRESIDENT OF THE INTERNATIONAL TELEPHONE & TELEGRAPH CORPORATION

Yet no one was ever more charming or more suave than Sosthenes Behn. From day to day and from year to year, he is unchanged. However volatile the Latin blood within him, the face he presents to the world is always composed, pleasant, confident. He has few enemies; he himself will not admit that he dislikes a half-dozen people.

Sosthenes is an arresting figure, a great industrial adventurer whose light is too strong to be hidden under even the bushels of his own modesty. But he is only half of Behn Brothers. He is, to be sure, the more exciting half, the more glamorous half, but still only half. For across from his office in the high tower is the office of Hernand, and Behn Brothers is today as real in spirit as it was when the ten-year-old boy scribbled it on paper, as real in fact as when the two proudly set up business in Porto Rico. The brothers are in perfect balance. If Sosthenes has more daring, Hernand has more intuitive caution. If Sosthenes has boldly seized each successive opportunity, gathering property after property into the huge I. T. & T. system, Hernand has quietly taken into his care the real firstborn and has made the Cuban Telephone Company the most successful telephone unit of them all. Hernand is no industrial Don Quixote. He is cerebral, even reluctant. But his loyalty to his brother amounts to a passion. And his functions as half of Behn Brothers are not to be underestimated.

. . .

Behn Brothers have built one of the world's most spectacular enterprises. In the process they have become both famous and rich. Their offices are perched on that conventional pinnacle of wealth and success, the skyline of Manhattan. But Sosthenes and Hernand Behn have not lost their inheritance. Their faces turn often to the east and to the south. To the warm islands which nurtured them. To St.-Jean-de-Luz, where their villas are bright under Latin suns. To Paris, where their houses stand beside the houses of other Parisians. They are still world dwellers, and other strains than the Anglo-Saxon still disturb their blood.

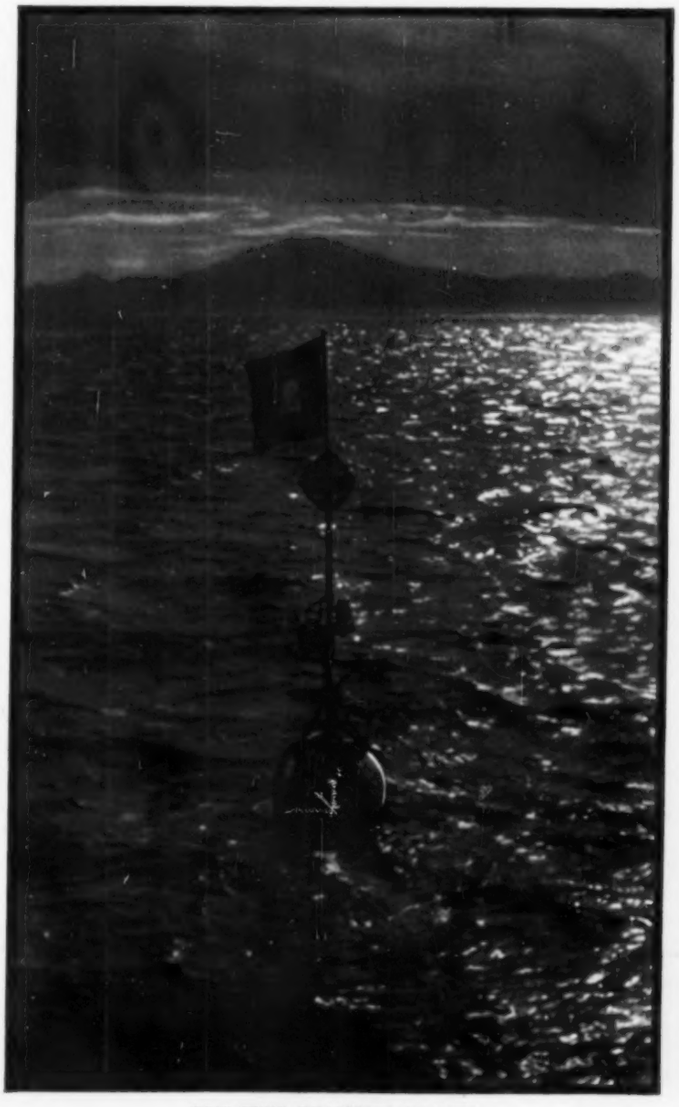
. . .

They are, withal, Americans. The enterprise made possible by their partnership, however closely attuned to the spirit of a score of nations, is yet an American enterprise, and they themselves do not confuse their internationalism with the essentially American framework upon which it now hangs. This framework is something far more substantial than their accustomed New York life, more significant than their American wives or their children. In May, 1921, when he stood at the threshold of his career, Sosthenes married blonde, lovely Margaret Dunlap of Philadelphia. They have two sons, Edward and William. This family provides Sosthenes's one major interest outside the company. Hernand's son is at an American school and his daughter was prominent among last year's New York débutantes. But even more American than this normal life is the driving plan which embraces their every project. As they are the dominant personalities of I. T. & T., so is this plan the vast system's dominant theory. It can be described briefly as an American communications system. What this means and how it is being realized are told in the following pages.

I. T. & T. Ends a Brilliant Decade

And finds: its telephones multiplied, its factories growing, its competition awakening, its world expanding. What John Cutler would do and what Newcomb Carlton won't do. An Asiatic projection and a skirmish in the long war to win the love of the South American businessman. And, finally, these far-flung incidents linked in the Behn plan.

IN 1921, the Brothers Behn came to New York to launch the International Telephone & Telegraph Corporation. The Cuban and Porto Rican telephone companies had made steady advances through the War and post-War years, adding telephones at the rate of 4,000 a year and bringing net income from under $400,000 in 1915 to over $1,000,000 in 1920. But this was of interest chiefly to the Cubans (and Spaniards) who shared ownership with the Behns. Impressive as was the company's name, substantial as was its income, it operated in a territory where depression was almost a general rule, and it was enriching no one who could open up the vast credit reserves of Wall Street. The Behns wanted New York support for an American stock issue. They had an exceedingly hard time getting it. The National City had brought out the Cuban bond issue of 1921 and was their friend, but did no business in stocks; the Colonel's own Guaranty was going through a hard year; Morgan was not in the picture at all. While the Behns had an assured position in New York, sponsors for an issue of the new company's common stock were not easily found. It was not until the brothers met an able young man by the name of Cutler, just back from the War and with big ideas, that they began to see light. Cutler was then a most aggressive factor in the house of E. B. Smith & Co. He was profoundly impressed by the Behn personality and the Behn plans, and he devoted the best part of 1922 to the effort to give them a footing in the Street. At length, he convinced his partners that the project offered their house a big chance, he persuaded Dominick & Dominick to go along with him, and in April, 1923, these two houses brought out an issue of 50,000 shares of I. T. & T. common at $68.50 a share ($3,425,000). This was the real beginning of the years of expansion. The Behns never ceased to be grateful, and Mr. Cutler did his house the best single turn it ever enjoyed.



OFF THE SPANISH COAST

. . . bobs this cable buoy. It marked the first dramatic venture of the International Telephone & Telegraph Corporation (see page 42). Today, it is one of hundreds scattered throughout the world.

With the surface record of I. T. & T. progress in the next seven years, American investors became gradually familiar. The record was dazzling. Between 1924 and 1930, plant and property account went from $26,650,000 to $297,700,000, and total assets from $38,300,000 to $535,200,000. Gross earnings were $5,850,000 in 1924, and $100,340,000 in 1929. Net income followed with a jump from $1,930,000 to $17,730,000. And these figures, staggering as they were, represented a program of acquisition which could only be described as sensational. Its chronology appears elsewhere in this article. In general, it transformed the International Telephone & Telegraph Corporation from a telephone operator in two semitropical islands to the largest telephone operator outside the U. S., the second largest telegraph operator in North America, a cable company with one arm vigorously competing across the Atlantic, one arm across the Pacific, and a third stretching to South America, an active participant in the radio scramble, and a manufacturer doing a business of some $70,000,000 a year.

That such spectacular growth should have excited the investor in the boom years is not at all surprising. When, on September 3, 1929, the common sold for $149.25 a share, it was being valued at forty-eight times earnings. On the same day, A. T. & T. sold at twenty-three times earnings, Western Union at sixteen times, and Radio at sixty-four times. A. T. & T. was and is, of course, the world's premier common stock, Radio has enjoyed (or suffered) constant bull manipulation, and Western Union is as much a colorless stock as it has been a colorless company.

ALTHOUGH THE AREA OVER WHICH ARE SPREAD THE NETWORKS OF I. T. & T.-CONTROLLED TELEPHONE SYSTEMS IS ONLY A FRACTION OF SOUTH AMERICA'S TOTAL AREA, THESE SYSTEMS INCLUDE OVER 55 PER CENT OF THE CONTINENT'S TELEPHONES. ONLY ONE MAJOR COMPANY—THE BRAZILIAN—IS TODAY OUTSIDE THE I. T. & T. GROUP. HERE I. T. & T. HAS INVESTED ABOUT $110,000,000. AS NATIONAL COMPANIES ARE FORMED, LOCAL INVESTORS BECOME I. T. & T. PARTNERS

PRIVATE OPERATORS, INCLUDING THE I. T. & T., ARE MAKING SLOW BUT SURE PROGRESS IN CHANGING EUROPE'S TRADITIONAL THEORY OF GOVERNMENT TELEPHONE OPERATION. HERE CAN BE SEEN THE I. T. & T. NETWORKS, THOSE OF ERICSSON, THE SMALL LISBON AND OPORTO AREAS WHERE THEODORE GARY HAS MADE AN ENTRANCE. BUT MOST SIGNIFICANT ON THIS MAP ARE THE EQUIPMENT FACTORIES, HELPING MAKE UP I. T. & T.'S $70,000,000 MANUFACTURING REVENUE IN 1930

I. T. & T.'s tremendous market prestige was due neither to the public's suspicion of concealed earnings nor, in its early stages, to such organized popularity as Mike Meehan can give a stock. It was due almost entirely to the repetition, month after month, of stories of I. T. & T. mergers, purchases, concessions. Since January 1 of this year, the New York *Times* has carried more than fifty stories about the company, a notable publicity record for any organization.

As public confidence in expanding companies continued to mount in 1929 and lifted the stock to what now seems unjustifiable levels, so the public pessimism of 1930 knocked the stock to levels astonishingly low. As the company this year will almost certainly cover its $2.00 dividend, the October 10 price of $25.12 represented an amazing reversal of general opinion, a reversal not explicable by such temporarily discouraging factors as the Latin-American revolutions or the fall in the peseta. Rather, it has been the realization, in some quarters fostered, that I. T. & T. has had to pay full prices for its properties, that interest and dividend requirements on the expanded capitalization have increased even faster than the earnings, and that nowhere in the statement of the company can there be found figures to show increased profit on each dollar invested. The world-wide depression has, in fact, overtaken the company and has thrown its current earnings per share of stock to a level lower than in any year since the company was founded.

While these doubts were not unnatural, they were founded upon an incomplete understanding of the I. T. & T. record and the I. T. & T. plans. The record of the Behns in Cuba had much to do with the enthusiasm of the early sponsors of the company. The Cuban record was even then a ten-year record; other records must also be ten years old before the picture will form completely. Next oldest and most typical of I. T. & T. developments is the Spanish concession. It is now drawing to the close of its sixth year. Some idea of progress may therefore come from its study.

. . .

When Miguel Primo de Rivera y Orbaneja announced himself "at the Royal Feet of

BARCELONA IN 1926, BEFORE I. T. & T. RECONSTRUCTION

. . . was Spain's second city and chief seaport. But her telephone service, enmeshed in such an overhead cat's cradle as this, was so bad that there were only 2.5 telephones for each 100 inhabitants. And it took half the day to call Madrid.

Your Majesty" and besought Alfonso's signature to a decree authorizing the closing of I. T. & T.'s contract, he bore witness to a number of highly important things. First of all, he paid tribute to the extraordinary talents of Sosthenes Behn. Although Colonel Behn had hastened to Spain after the first, ground-breaking stock issue in 1923, he found both the Ericsson Company (Sweden) and Siemens & Halske (Germany) bidding for the Spanish telephone system. He immediately took a hotel suite, sent for a corps of engineers, accountants, and even typists, and proceeded to turn himself into a combination of a social Spaniard and an industrial American. Negotiations were long and tortuous; over a period of nearly a year, the terms of the proposed concession were continually being modified. One of the principal reasons for I. T. & T.'s ultimate success lay in the fact that after each modification, Colonel Behn and his staff would sit up all night and have a new contract ready for the government's consideration on the morrow. It was the first application of direct method as Colonel Behn understands it, and it was justified on August 26, 1924, when the contract was signed.

Another fact to which the Dictator testified in his petition to the King was the breakdown in governmental telephone operation in Europe. He spoke of "the heterogeneous character of the system . . . antiquated legislation . . . mosaic of administrative contracts . . ." but he did not do justice to the situation. At Vitoria, a city of some 36,000 inhabitants, the switchboard dated back to a time just fourteen years after Alexander Graham Bell invented the telephone. While some of the 90,000 scattered telephones were operated by private companies, the government controlled the Madrid and Barcelona long-distance systems, producing the most impossible confusion. Subscribers could make calls within the city from their own houses, but if they wished to call another city, they had to go downtown and wait their turn at the long-distance station.

They might wait an hour and they might wait half the day. When at length their calls were put through, they were often cut off with a few seconds' conversation, clearing the circuit for a newspaper or a bank which had leased the wire for fixed periods daily. Even worse than the service was the plant itself. Iron and copper wires paralleled each other in the same circuit. Repeaters, to strengthen weak currents, were unknown. Underground cables did not exist. Wires were strung along housetops and terminated in huge open-work baskets.

It was altogether hopeless, as the Dictator realized, and it was worse than most of the European systems. Hence Spain became the first nation to turn over its entire area to private operation. Italy followed, dividing its territory among four companies (of which Ericsson was one). Rumania is this year's I. T. & T. convert. Others will make the change when national politics permit.

So far as Spain itself is concerned, the experiment must be considered an unqualified success. Instead of the contract's stipulated "average delay of not more than thirty minutes" in inter-station conversation, the new service was quite as rapid as any in the world. The contract called for completion of the system within five years, and while the last provision was not met until one week before August 26, 1929, I. T. & T. had in fact bettered its promises by some 30 per cent of plant. Further, this plant has a good claim to be called the world's best. It is of course idle to compare a 250,000-phone system with the 15,690,000 phones of A. T. & T., but in point of mechanical perfection the Spanish unit surpasses any similar unit now in existence. Telephone service

BARCELONA IN 1930

. . . with underground cables and automatic plant of the most modern type, has 4.4 telephones for 100 persons. (But Chicago has 30.) And it takes five seconds to call Madrid.

MADRID

. . . before telephone reconstruction, was dotted with these gangling overhead distributing baskets.

INTO THE DELICIAS EXCHANGE, MADRID

. . . underground cables today carry the city's mounting total of messages. Part of the world's best plant, this exchange is one of the reasons why Spain's telephones have more than doubled in five years.

in New York City, for example, is today only about half automatic; Spain is now about 70 per cent automatic. Everything is brand-new and of the most advanced type. On the personnel side, the Dictator was naturally anxious that the company should be directed and staffed by Spaniards. While in the peak years 1926 and 1927, Colonel Behn sent into Spain a flying squadron of about 260 Americans and other non-Spaniards—his own engineers, engineers borrowed from A. T. & T., accountants, skilled workmen of all sorts—he also succeeded so well in training the old Spanish employees that there are today only a half-dozen Americans among the 10,831 on the pay roll of the Compañía Telefónica Nacional de España. One is executive vice president, another is chief engineer, a third is comptroller. In spite of its relationship to New York, the Spanish company is an essentially Spanish institution, financed in large part by Spanish investors, operated by Spaniards, and making a substantial contribution to the well-being of the Spanish state.

Thus the physical and personal achievement in Spain. It remains to be demonstrated that this rationalization of a country's communications is accompanied by a corresponding increase in traffic. The number of telephones in service has approximately tripled, from under 100,000 in 1924 to about 250,000 in October of this year. This is an important check on the total I. T. & T. increase form 156,000 to 721,000. In 1925, Spaniards poured the equivalent of nickels and dimes to the extent of 275 pesetas into each telephone. By 1929, the flood of coins had mounted to 415 pesetas, and total revenues had jumped from 29,000,000 pesetas in 1925 to what will approximate 80,000,000 this year. A large part (23,000,000 pesetas) of this gain, of course, can be found in the revenues from the toll service. Most visible, perhaps, of the signs of this tide is the traffic over the Madrid-Barcelona circuits. Before I. T. & T.'s entrance into Spain, four iron wire circuits connected these busiest cities. I. T. & T., with some misgivings but with an eye to 1935, put in ten circuits, over which service was instantaneous. Two years ago, it had to install twelve more. The toll call, as a practical proposition in Spain, was invented by I. T. & T.

This has obviously cost money, and I. T. & T.'s investment in Spanish telephones (apart from the Spanish factors) has grown from 140,000,000 pesetas in 1926 to 680,000,000 in June of this year. This tremendous pace was dictated by the terms of the concession, and it would not be extraordinary if the investment had grown faster than revenues of profits. But actually the estimated return has shown a consistent increase, from a low of 4.6 per cent in 1926 to a high of 6.5 per cent in 1930. Under the terms of the concession, I. T. & T. *may* earn 8 per cent (plus 2 per cent for a general reserve) and may adjust the rate structure to bring such a yield. The revamping of the rate structure has proved to be a long and delicate job; it has been complicated by the instability of the peseta (see note at the end of this article); it is not yet complete. But there is every reason to suppose that it will be accomplished and that the 8 per cent return will become fact.

The figures reveal at once the great size of such an undertaking and the eagerness of the Spanish response to it. That return on investment has increased in the face of a forward-looking construction program indicates that I. T. & T. has in Spain for many years to come an opportunity to invest money profitably. Spain is still in the kindergarten grades so far as telephone *use* is concerned.

BETWEEN THE KING AND THE DICTATOR

. . . of Spain, there stretched an embarrassing gap of land and water. The year was 1924. Primo de Rivera was in Tetuan, Morocco, directing the war against the Riffs. King Alfonso XIII was in Madrid. Colonel Behn volunteered to bridge the gap. Within a few days, telephone service was established over the submarine telegraph cables of the Spanish Government, and before the year was out, a new cable was being carried from the cable ship (above) to the Spanish shore (below). This was the first example of I. T. & T. enterprise in Europe. It was a most auspicious opening for the Spanish venture. At the time this cable was laid, I. T. & T. owned a half-interest in the 115-mile cable between Cuba and the mainland. Today, it controls over 66,000 miles of underwater telephone and telegraph cable, carrying thousands of messages each day.

Its 8 phones per 1,000 population compare with Cuba's 22, England's 41, Germany's 50, Canada's 144, and 165 in the U. S. And Madrid's 46 phones match 91 in Havana, 118 in Berlin, 300 in Chicago.

. . .

When local money markets and earnings of the national companies become sufficiently stable, I. T. & T. takes into partnership the people of the countries in which it operates. The Cuban company has $6,071,000 preferred outstanding, for the most part in Cuban hands, and its funded debt of $7,503,000 is held both in the U. S. and in Cuba. Spanish investors have taken up a 300,000,000 peseta issue of preferred stock and about 20 per cent of the common stock in the national company organized to operate the nation's telephones. And the Spanish company has outstanding a funded debt of 100,000,000 pesetas, floated to pay back the I. T. & T. loans.

Thus I. T. & T.'s financial policy in foreign countries begins to take outline. First comes a drive to create earnings, no expense being spared to build for future national development. Then comes local refinancing of a part of I. T. & T.'s investment. But I. T. & T. keeps its equity in the business. The effect of this policy can be seen from a comparison of I. T. & T.'s commitment in the various systems. In Cuba, the I. T. & T. controls a system of 75,000 phones with an equity holding of $13,000,000. There are approximately 200,000 telephones under I. T. & T. control in Spain and in the Argentine. Yet I. T. & T.'s investment in Spain is some $47,000,000 against an estimated $88,000,000 in the Argentine. Presumably I. T. & T. intends to finance further Spanish growth locally and to finance a portion of the Argentine growth in the Argentine investment market as soon as possible. And this program will be duplicated with all the major telephone properties of the system.

. . .

Through the media of Cuba and Spain, we see stretched out the main lines of I. T. & T. policy and the high spots of I. T. & T. experiences in world-wide telephone operation. Since Cuba, Spain is the first job which has had time to show results. Thus

By Burton Holmes—From Ewing Galloway

CHRIST OF THE ANDES

. . . a monument to peace between Chile and the Argentine towers above the Transandine Railway, which tunnels through the mountains at 10,452 feet.

although a glance at the map on page 38 reveals the extent of I. T. & T. activities in South America, where it now operates over 50 per cent of all telephones, the most important South American company (the River Plate Company in the Argentine) was acquired only last year, after four years of negotiation. The Spanish performance is the I. T. & T. model, as to contract, nationalization, equipment, etc. There is no obvious reason why Spanish success should not also be duplicated.

. . .

Within this last year, opposition to the spread of I. T. & T.'s telephone operations has won two powerful allies. One is Mr. Ivar Kreuger, the genius of the Swedish match trust, and the other is the Transamerica Corporation, greatest of bank chains. In point of resources, the two together do not, of course, match the House of Morgan, which has been the leader of I. T. & T. backers since 1925. But Mr. Kreuger, buying into the Ericsson Company, brings resources more useful than money. Of the ticklish business of dealing with governments, he has shown himself the most adroit living master. If he can duplicate with Ericsson his tremendous achievement with Swedish Match, bringing into the telephone chain such important links as France, Germany, Hungary, and Jugoslavia (all now government-operated), he will leave I. T. & T. a poor second in the European race. But telephone concessions are harder to get than match concessions. Kreuger's Ericsson Company is now in southern Italy, in Poland, and in Mexico (which it divides with I. T. & T.), and none of these properties is comparable to Spain or the Argentine. Against further expansion will be leveled the vigorous competition of the Behns. No such force opposed Mr. Kreuger's marketing of the match.

As for Mr. Theodore Gary of the General Telephone & Electric Corp. and his new Transamerica ally, I. T. & T. seems to be threatened as a manufacturer rather than as an operator. General Telephone (now holding company for Associated Telephone & Telegraph) operates some 250,000 telephones outside the U. S., fully half of them being in Canada (British Columbia), where I. T. & T. has no ambitions, another group scattered through Latin America, which I. T. & T. adequately controls, and only one company of any size in Europe. This is the Anglo-Portuguese, operating in Lisbon and Oporto (see map) and totals only 21,000 telephones. As a manufacturer (Automatic Electric Co.), however, the vigorous seventy-six-year-old Mr. Gary is a force to be considered by both A. T. & T. and I. T. & T. He is a grand old man, a six-foot Kansan, and an able, resourceful maker of telephone equipment. In the U. S., he has fought with Western Electric, and abroad his most notable success has been in England, where he has a large proportion of the country's business.

. . .

For all the activity of Mr. Kreuger, Mr. Gary, and the Siemens & Halske group, the most urgent competitive problem of I. T. & T. is neither in the business of telephone operation nor in the business of making telephone equipment. When, in 1928, the Behns bought the telegraph and cable companies headed by Clarence Hungerford Mackay, they stepped into an exceedingly puzzling situation. Postal Telegraph was then doing only about 17 per cent of the domestic telegraph business, conceding the rest to Western Union without much murmur. After the War, in fact, Postal's principal function was to act as a feeding and distributing agent for Commercial Cables, and while its business increased with the normal trade increase, Western Union was taking the lion's share of each year's new business. The Behns, buying Postal as a necessary step in their world plan (of which more later), were determined to make the company a real power. Mr. Mackay, whose capacity for awakening and holding personal loyalties is exceeded by no American businessman, naturally remained as chief, but about him I. T. & T. put four aggressive young men with A. T. & T. training. Most notable of the four is Colonel A. H. Griswold, a direct-action man who ran the telephone and telegraph systems of the A. E. F. and in that fierce school learned the value of record communications (telegram, cable) as against the telephone.

This new management has created a new company. Postal is now making a determined

A MONUMENT TO I. T. & T.

. . . is this iron pole of the trans-Andean line. Not until I. T & T. strung its wires across the mountains in 1928 had one South American capitol spoken with another.

effort to merchandise itself. It is establishing schools for its messenger boys, it has taken advertising schedules in the country's chief newspapers, and it is attacking, one by one, the industries which carry large telegraph files. A typical effort has been directed, within the year, at the florists' delivery-by-telegram business. First comes a kind of rabbit-out-of-hat performance. At the speakers' table, during a florists' banquet, sit (preferably lovely) operators, each in front of a typing telegraph device known as a printer. Messages go out to florists all over the world; a Postal official explains what is happening, continues to speak until the answers come in. A tremendous hit was registered at the convention of the Florists' Telegraph Delivery Association when a Buenos Aires confrere telegraphed his regret that the florists could not see his exhibition of an obscure azalea. The most spectacular of all the shows, of course, was that evening last June, in San Francisco, when I. T. & T. sent a message around the world in five minutes, thirty seconds, beating the record by some two and one-half minutes. The show (for the N. E. L. A. convention) followed Owen D. Young's great speech on surpluses and in spite of the handicap was a howling success. A recent and important show was given for the Hotel Managers Association.

On the heels of the show, Postal advertises

[*Continued on page 118*]

Fourteen Contributors

To I. T. & T.'s great decade. These bankers, operators, and lawyers now sit, with eight others, upon the company's board. The chronology of their arrival is also the chronology of a mighty enterprise.

© Fortune

ALLEN G. HOYT

. . . who, in I. T. & T.'s first years, advanced its cause with the National City.

© Fortune

MARQUÉS DE URQUIJO

. . . who helped bring Spanish money to I. T. & T.'s Spanish subsidiary.

International

EDWARD J. BERWIND

. . . who is most venerable of the twenty-two I. T. & T. directors.

© Fortune

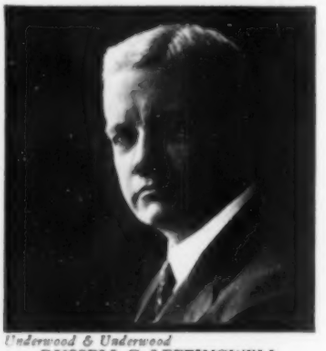
HENRY B. ORDE

. . . who, after the Behns, is the chief of the company's executives.

Underwood & Underwood

CHARLES E. MITCHELL

. . . whose bank handled the Behn financing in Cuba and Porto Rico.



Underwood & Underwood

RUSSELL C. LEFFINGWELL

. . . whose arrival on the board meant the entrance of J. P. Morgan & Co.

© Fortune

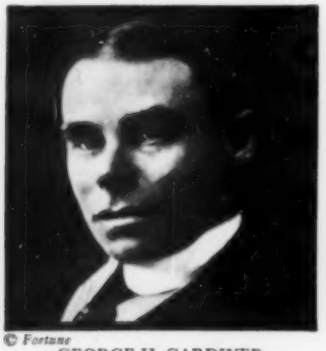
GEORGE E. PINGREE

. . . who runs I. T. & T.'s $70,000,000 a year manufacturing business.

© Fortune

JOHN W. CUTLER

. . . who had the vision, in 1923, to bring out I. T. & T.'s first U. S. stock issue.



© Fortune

GEORGE H. GARDINER

. . . who, a great lawyer, is also the company's trusted friend and guide.

P. & A.

CONDE DE GUELL

. . . who is a rich Spaniard, a leading industrialist, and a friend of the Behns.

International

LANSING P. REED

. . . who is a most active partner in Davis, Polk, Wardwell, Gardiner & Reed.

Underwood & Underwood

CLARENCE H. MACKAY

. . . who is a philanthropist, dilettante, and much-loved head of Postal Telegraph.

Underwood & Underwood

JOHN L. MERRILL

. . . who is veteran of, and authority on, cable communications between the Americas.

© Fortune

F. WILDER BELLAMY

. . . whose banking house joined with E. B. Smith & Co. in the 1923 stock issue.

The Cabinet of the Brothers Behn

How twenty-two men happened to sit down at the same table.

REACHING out through the air and under the waters, the Behns did not, of course, find only wires or cables or factories. They also found the men who strung the wires and laid the cables and built the factories. And the chief of them, the Behns, sat down at a long deal table in front of a pattern of $20 goldpieces. Already at the table were gathered another group—the men who had been prophetic enough to guess that bread cast upon the waters in 1921 (or 1916 or 1923) would return in bountiful measure before they were too old to enjoy it, and, indeed, before the decade was out. Year by year, others came to join the group (1929 was the first year to see no new face at the table); a few dropped out. By 1930, there were twenty-two such men in the cabinet of the Brothers Behn. The chronology of their arrival at the May meetings at the directors' table reflects very accurately the progress of I. T. & T.'s fortunes:

1923.—Hernand Behn, Sosthenes Behn, George H. Gardiner, Henry B. Orde.

1924.—F. Wilder Bellamy, Edward J. Berwind, John W. Cutler, Allen G. Hoyt, John L. Merrill Charles E. Mitchell, Walter E. Ogilvie, Bradley W. Palmer

1925.—Marqués de Urquijo

1926.—Arthur M. Anderson, Conde de Guell, Russell C. Leffingwell, George E. Pingree, Wolcott H. Pitkin

1927.—R. Fulton Cutting, Lansing P. Reed, Logan N. Rock

1928.—Clarence H. Mackay

In May, 1923, when I. T. & T. published its second report (for 1922), its directorate included only two men, besides the Behns themselves, who are now to be found at the long table. Mr. Orde and Mr. Gardiner were destined to become the leaders of the two groups—the management group and the advisory group—which are to be found in most directorates. Henry B. Orde was a stocky, thick-haired, Canada-trained banker when he first entered the American Colonial Bank in Porto Rico. He met the Behns, liked them, became one of the first converts to their telephone plans, and in 1916 found himself director and treasurer of Behn Bros., Inc. In 1920, Behn Bros., Inc.'s function was complete and when I. T. & T. was born, Mr. Orde assisted at the delivery. Today, he ranks next to the Behns in I. T. & T. management, is a close-mouthed, open-faced, vigorous man of fifty-five, completely absorbed in the company's affairs. George H. Gardiner, by way of contrast, is absorbed in many another enterprise, being the fourth man in the law firm headed by John W. Davis, and a great comfort to that firm's most profitable client, the House of Morgan. Nonetheless, Mr. Gardiner drew the original papers of incorporation for the brothers and mailed them to the Secretary of State of Maryland, and his name has always been printed twice among the directors, once in its proper alphabetical position, and once at the end of the list, as "General Counsel." The title is more general than specific. I. T. & T. has many legal advisers and a law department of the first rank. But while Mr. Gardiner would not now draw up articles of incorporation, he remains the company's guide, philosopher, and friend, and despite the glittering figures which later took their seats at the table, perhaps the most indispensable I. T. & T. director today.

When Mr. Orde and Mr. Gardiner came to the meeting of May, 1924, they found eight new faces at the table. The year 1923 had, in fact, marked the most significant step yet undertaken by the Behns—the entrance into the New York credit market. To the board, then, there came Charles E. Mitchell and Allen Grey Hoyt of the National City. The Mitchell history is well-known. Hoyt's career had closely paralleled that of Frank A. Vanderlip—each was born in Aurora, Illinois; each began his work in Washington; they came to the City within a few months of each other, and they worked together to develop the bank's young bond department. It was Hoyt who convinced Mitchell that in spite of a disturbed market, the City should finance the Behns' projects in Cuba and Porto Rico.

Together with the City's representatives there appeared, of course, the comparative youngsters who had ventured to underwrite the issue of I. T. & T. common in April, 1923. John W. Cutler and F. Wilder Bellamy left Harvard and Yale in 1909, two tall, slim, polite, and eager young men. Cutler had been a famous Harvard athlete, stroke of the crew in his first year, and in his fourth, All-American quarterback under Percy Haughton. Afterwards he became a Boston (Lee, Higginson) banker, a distinguished ordnance officer in France, and a talented amateur artist. Not until the War ended did he join E. B. Smith & Co., where he opened a successful career with the I. T. & T. deal. His latest honorary office is the presidency of the Hangar Club, an ultra-smart, ultra-rich group of aviators and friends of aviators, including Colonel Behn, H. P. Davison, Marshall Field, W. A. Harriman, Gordon S. Rentschler, and others. Bellamy was first a lawyer (O'Brien, Boardman, Parker & Fox), then a banker. He was the Dominick & Dominick partner assigned to I. T. & T.'s affairs. Like Cutler, he has kept his slimness, his distinction, and his love of sport.

Also in this crucial year, to the board table came that grand old man, Edward Julius Berwind, whose chairmanship of the Berwind-White Coal Mining Co. heads an almost endless list of distinctions, who adores the husband of his niece, Mrs. Sosthenes Behn, and who, at eighty-two, is the best-loved of all who sit, noon after noon, at the cheerful tables of the Recess Club. And in this year, Bradley Webster Palmer, Harvard '88, fisherman, bachelor, chairman of United Fruit's executive committee. And Walter Ellsworth Ogilvie, a potent railroader in Cuba, yachtsman in America and England, Republican and Baptist. And John L. Merrill, who began his career as a $5.00-a-week errand boy in the two-room office of that daring enterprise which had drawn 5,000 miles of cable from Texas to Peru; who finds himself, in 1930, president of All-America Cables with 30,000 miles of underwater cable and handling 7,000 messages a day; whose record of service now covers close to half a century.

The year 1924 saw the signing of the Spanish contract; when May, 1925, arrived, a great grandee had joined the group about the Behns. Don Estanislao de Urquijo y Ussia, Marqués de Urquijo, is perhaps the richest man in Spain, is certainly that nation's foremost banker and financier. Interminable are his names, his orders, and his children. The proudest and most embarrassing moment of his life (and in the life of his lovely Donna Maria) arrived when his heir turned out to be twins. But in time, the meticulous Marqués was satisfied that Don Juan had preceded Don Luis by some moments, and in the due course of events, Don Juan came to America to prepare himself for his great financial responsibilities. The Marqués, who bears the title of president of the Compañía Telefónica Nacional de España, is of course not the operating chief. His Banco Urquijo, however, led the list of Madrid underwriters of the company's preferred stock.

With the Marqués de Urquijo had been elected the Marqués de Comillac. This almost equally rich and illustrious grandee died, however, within a few months of his election and was succeeded, at the 1926 meeting, by his nephew, the Conde de Guell.

[*Continued on page 124*]

Armored Cars

Mr. Ammunition Wheed unwittingly inspired them. Bullets would glance off their walls and their windows. But no bandit ever attacks them. Not even when they move the Federal Reserve and take $4,000,000,000 from vault to vault. They shoot too fast. They are too tough.

IN 1859 a man named Brink came out to Chicago from Vermont. There were then only 95,000 people in Chicago, but it was nevertheless a great center of traffic and many were the trunks and suitcases moving through its streets. So Mr. Brink bought a horse and wagon and made a living through the collection and delivery of parcels, baggage, and merchandise. He had an office on Randolph Street and a crew of trunk-carriers who added to their fame and their incomes by wagering on their ability to lift loaded beer wagons. Mr. Brink apparently did not begin his business with any intention of specializing on the transfer of money, but after he got a job moving six bags of silver dollars, each weighing sixty-one pounds, from the Home National Bank at Halsted and Washington streets to the Federal Building, he realized that money-moving might be a business in itself. Not that there were any bandits in Chicago at that time, but paper money was none too stable and everyone had a strong preference for gold and silver—a preference which made money transfer a matter of heavy moving. So in 1891 Mr. Brink began moving bank funds and pay roll money (his first pay roll customer was Western Electric). Today, operating in nearly 600 cities, Brink's Express covers its transportations with insurance amounting to more than $1,000,000,000.

But though Brink's is still the largest money-transporter, it has today its parallels in many American cities. In New York there are the United States Trucking Corp., the Armored Service Corporation, and Brink's New York branch, and certainly few occupants of the financial district have missed seeing their steel-plated, tank-like treasure cars manned by crews with automatics in their hands and machine guns at their feet. The usual reaction to their presence is the reflection that things have come to a pretty pass when a man has to hire a traveling fort to carry his money in, but although the situation which produced them is no doubt deplorable, their solution of the problem has been unqualifiedly a success. It is only the cinema bandit who attacks armored money-transports; and though United States Trucking alone moves some $20,000,000 a day from the Federal Reserve to New York banks, the operation has never included the firing of a single shot. Society has been frequently reproached with its inability to guard the lives of its members. Severe, too, is the indictment of the tribute paid by industry to racketeers and gangsters. But society (through its money-transport agencies) can come very close to guaranteeing that a shipment of money will reach its proper destination without being molested on the way. You can take a man's life from a distance. But you have to take his money in your hand. And such a capture has at least approached the impossible.

GUNS THAT ARE ALWAYS DRAWN MAY NEVER NEED TO BE FIRED

Daily from the Federal Reserve to Chase National, to National City, to many another Manhattan bank, travel small fortunes in small forts. This money, attractive to the bandit eye, is never molested.

It was, as might be expected, the Brink's people who began the development of the money car into the armored car. And—astonishingly enough—it is entirely within the last thirteen years that this development has been recorded. Until 1917 (which was twenty-six years after the Brink's Express had concentrated on money-moving), funds in transit were carried in an ordinary automobile with an armed but not very apprehensive guard. For the bandit of those days belonged not to the Capone tradition but to the Jesse James tradition, was associated chiefly with the gold fields of California and Montana, and usually carried on his professional duties by hiding behind a rock and taking pot shots at the admirable target furnished by Wells-Fargo express guards perched on the tops of stagecoaches. In August, 1917, however, banditry came to Chicago in the person of one Ammunition Wheed, who shot two Brink's men (in the back) and got away with a pay roll. Mr. Wheed was promptly caught and later executed, but the Brink's company, alarmed, took the precaution of trailing their money cars with another machine carrying a rifle squad. Then, in 1928, in the suburbs of Pittsburgh, a Brink's car was dynamited, and the trailer car ran into the hole made by the explosion. After this further demonstration of the fact that crime was moving from the open spaces to the big cities, the Brink's men realized that stringent measures had become necessary. And so effectively were such measures taken that since the 1928 episode

no highwaymen have had the slightest success (and few the slightest interest) in the cars of Brink's Express or of any other accredited money-transport.

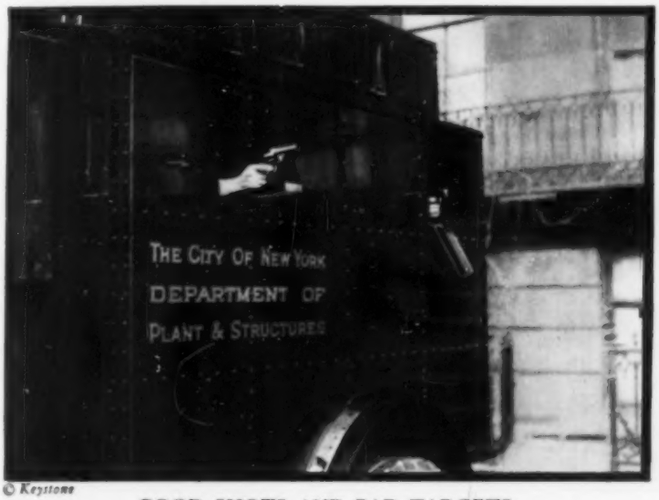
The modern armored car is, for all practical purposes, impregnable. No bullet can penetrate its steel sides, and bullet-proof, too, are its windows. It is manned by a crew of from three to eight men, armed with automatics, riot guns, and machine guns, and chosen with a particular emphasis upon their ability to shoot from the hip. Among the more recent additions to its equipment are tear-gas guns as well as ventilators to scatter the fumes of any gas attack attempted by a scientific highwayman. Except for the absence of caterpillar wheels, the armored car is essentially a tank. And the safest commodity in the world to transport is money.

It is true that the actual delivery cannot be quite so well covered, since at the point of destination the treasure guardians have to leave their fort and come out in the open. But even here the protection is convincingly adequate. The man carrying the money is followed and preceded by men with guns not in their holsters but in their hands. In the most important jobs (i.e., those involving the largest amounts), shipment is not by individual cars but by fleets. When Armored Service moved between $60,000,000 and $70,000,000 from an old Brooklyn bank building to the new, it used fleets of four cars with one carrying the money and the three others guarding the carrier. The Brink's people precede their more momentous Chicago jobs by making a careful study and detailed map of the district, station sharpshooters in upper stories and riflemen at corners, close the streets with barricades of armored cars, and keep a roving machine gun nest constantly on patrol. There are occasions in which the money transported is of so great an amount that one might expect even a bandit to take a risk in attempting to secure it. Yet United States Trucking's removal of $4,000,000,000 from the Federal Reserve's Equitable Building vaults to its present location at 44 Maiden Lane was accomplished with no untoward incident.

There remains, however, the possibility of theft through corruption rather than through force. Given a crew of $40 a week custodians, and a cargo which may easily run to between $3,000,000 and $5,000,000, and it would appear that the armored-car driver might not always deliver his shipment to the proper destination. But precautions against attack from within are as careful and as effective as precautions against attack from without. There is, of course, a complete bonding and insurance system which protects both the carrier and owner from loss, but thus far there is no record of an insurance company having to make good on a stolen shipment. Guards and drivers are chosen with utmost care. An applicant for service with Armored Service must be able to account for his life in full for ten years back. And bonding company detectives must agree with his report. He must be twenty-five years old (and ordinarily not more than forty-five), and a War record is a major asset. United States Trucking has a Russian ex-general and seventeen former U. S. Army captains. If he moves, he must supply his new address within twenty-four hours or be discharged, and he must not object to having his whereabouts frequently checked up by means of night telephone calls to his residence. If he works for United States Trucking, he must turn in his .45 Colt every evening, but if he works for Armored Service he can take his .38 Colt home. The Trucking people think it unfair to the populace to permit the free circulation of some 400 guns, whereas the Armored Service people argue that it is even more dangerous to leave a small arsenal in one building. The pay is not particularly high. An Armored Service man starts at $5.00 a day, rises to $40 a week. He has a five-day week, but he also has a ten or ten and one-half hour day. He gets prizes for avoiding delays and accidents and credits for performing good deeds (one Armored crew met an automobile full of suspicious-looking characters, asked to see their auto license, found they had none, followed them until they reached a policeman, who made a further investigation, and discovered that they were notorious criminals). When an Armored man accumulates 100 credits, he gets a raise in pay. He may also become a corporal or even a sergeant, but there are only seven sergeants. He must take target practice every week (Armored's instructor is a former West Pointer), but the chances of actually having to use his weapon are remote. On the whole, he is a simple, honest, reliable individual, pleased with his uniform, proud of his responsibility, and somewhat in the enviable position of a fireman who never has any fires. And he is emphatically not a criminal type.

Furthermore, his daily routine is carefully organized and closely superintended. He never knows who will be fellow members of his crew until he is ready to start out, as crews are drawn by cards each day and the personnel thus thoroughly shuffled. Routes are made out each day for the following day by an officer of the company, and the driver is given an assortment of blue slips for pick-ups and yellow slips for deliveries. He goes to his first pick-up (for instance, a bank), gets the money, receipts for it (adequate precautions are taken in the matter of signatures), notes the time on his pick-up slip, and consults slip No. 2 to see where he is going next. A complete log of the trip is kept by the custodian and signed by every man on the car. Among the slips are envelopes, each containing a nickel. When the custodian comes to an envelope, he calls up his home office and receives instructions concerning his next

[*Continued on page 132*]



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GOOD SHOTS AND BAD TARGETS

The bandit who prefers to shoot from ambush at unsuspecting victims sees no point in attacking steel-plated, loop-holed tanks. In addition to automatics, the guards are also equipped with riot guns, machine guns, and tear-gas guns.

© Keystone

HOLDING THE FORT

The ability to shoot rapidly and accurately is an essential qualification for the position of treasure guard. United States Trucking has among its custodians a former general in the Russian Army and seventeen former captains, U. S. A.

Looking into a City: Pittsburgh

Built on Tonnage and pointed toward Technology. The place where Andrew Mellon would choose to live the next seventy-five years. Lost: a crown of coal. Rediscovered: Westinghouse.

PITTSBURGH is a subject that can properly be approached only with humility. Its close-hanging hills are impervious to satire. The most brilliant aphorism will drop sparkless into its blast furnaces. Generalizations will fade into its smoke, which, generalizations to the contrary, is not unhealthy. Pittsburgh is a colossus of fact.

There is the fact of the fox. Out of a wood, down a November hillside, it runs for dear life, America's finest hounds four yards behind. And presently thirty pink-coated gentlemen come over a fence on horseback. Early Monday morning, earlier than New Yorkers, each and every gentleman will be at his desk near the confluence of the Allegheny and the Monongahela.

There is the fact of Barcowski, a harmless individual who was brutally beaten to death with a poker stick wielded by drunken Coal and Iron Police.

There is the fact of 97,000 school children who gave a dime each to the Cathedral of Learning. And a mill-worker who offered it $5,000. And a Magyar woman who gave it the price of a month's meat.

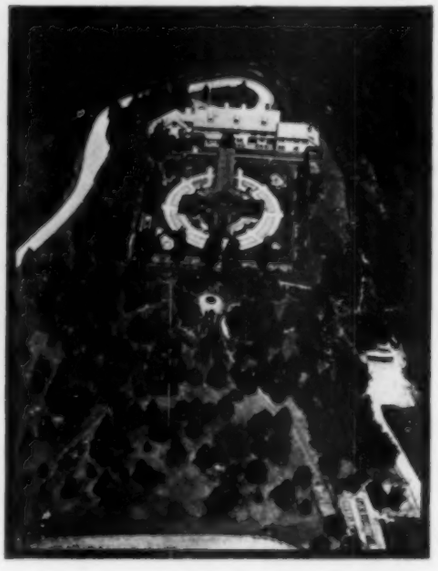
This last fact we will elaborate.

Some thirty years ago a rising realtor named Nicola, who is gentle, deaf, and grows a neat gray mustache, bought several hundred cheap acres in the Schenley district, exactly midway between the great residences and the great offices of Pittsburgh. In this district, Andrew Carnegie erected an art institute, a technology school, the biggest of his libraries. He then removed himself and died. Then a fierce old man named Frick, who was both partner and enemy of Carnegie, bought from the said Nicola fourteen acres of the Schenley land. No one knows why. Some say he intended to build the most conspicuous house in Pittsburgh. But, in any case, he happened to leave town and die. Then a man named Bowman, mild-mannered and wearing *pince-nez*, walked through Schenley acres, dreaming. Unfortunately for his peace of mind he was chancellor of the University of Pittsburgh, a huge institution which had little money and immense opportunity. In Schenley acres he found inspiration. He would stir the imaginations of all Pittsburgh, he would dramatize education, he would build a skyscraper university. But since he wanted not just a skyscraper, he wrestled with architects from many a dusk to many a dawn. When his plans were on paper, he walked out into the city for money. Pittsburgh broke down emotionally and offered him its dimes and dollars in a unanimous flood. Industries gave

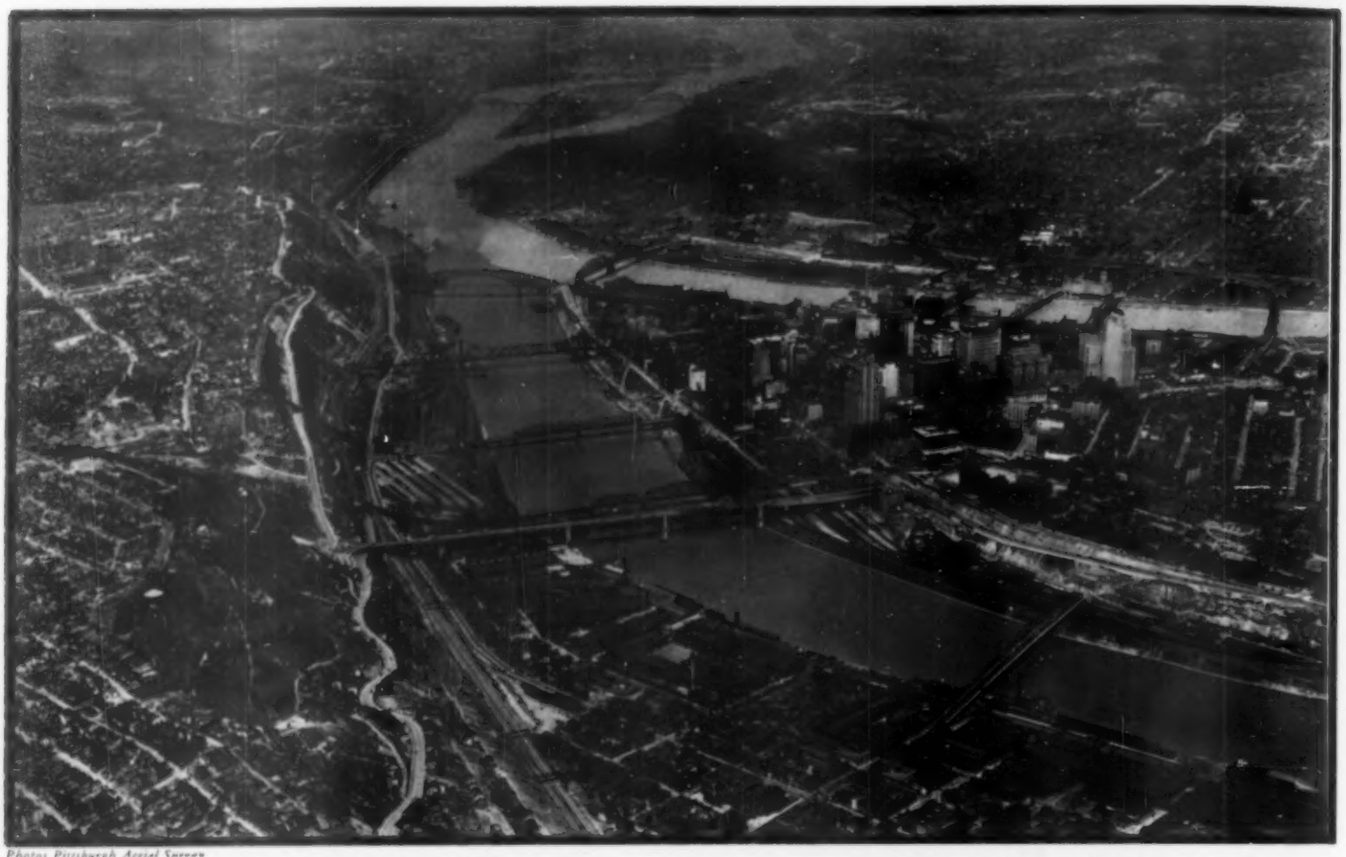
Photos Pittsburgh Aerial Survey

IN LOVELY SEWICKLEY HEIGHTS—PITTSBURGH'S "TUXEDO"

The great estates are located fifteen miles from the throbbing Golden Triangle. Above, the annual Sewickley horse show, where fashion gathers. To the right, a typical garden estate—that of W. C. McKinney, secretary-treasurer and director of Standard Sanitary. His factory is several miles up the Monongahela (see map). Representative of Pittsburgh's passion for cleanliness, Standard Sanitary makes bath tubs, vitreous china fixtures, dish-washing and clothes-washing machines. Last year it merged with vast American Radiator Co., the combination being largest enameler and vitreous china producer in the world, with 1929 gross sales of $182,000,000; net profit, $20,000,000.



THE TITANIC PLANT OF WESTINGHOUSE ELECTRIC IN EAST PITTSBURGH WHERE $10,000,000 A YEAR ARE SPENT IN RESEARCH. THIS IS PITTSBURGH'S PIONEER, HAVING GIVEN THE WORLD THE ALTERNATING ELECTRICAL CURRENT AND THE INTERNATIONALLY-KNOWN KDKA BROADCASTING STATION. IT IS BECAUSE OF WESTINGHOUSE THAT PITTSBURGH IS ONE OF THE NATION'S MOST ARDENT RADIO FANS



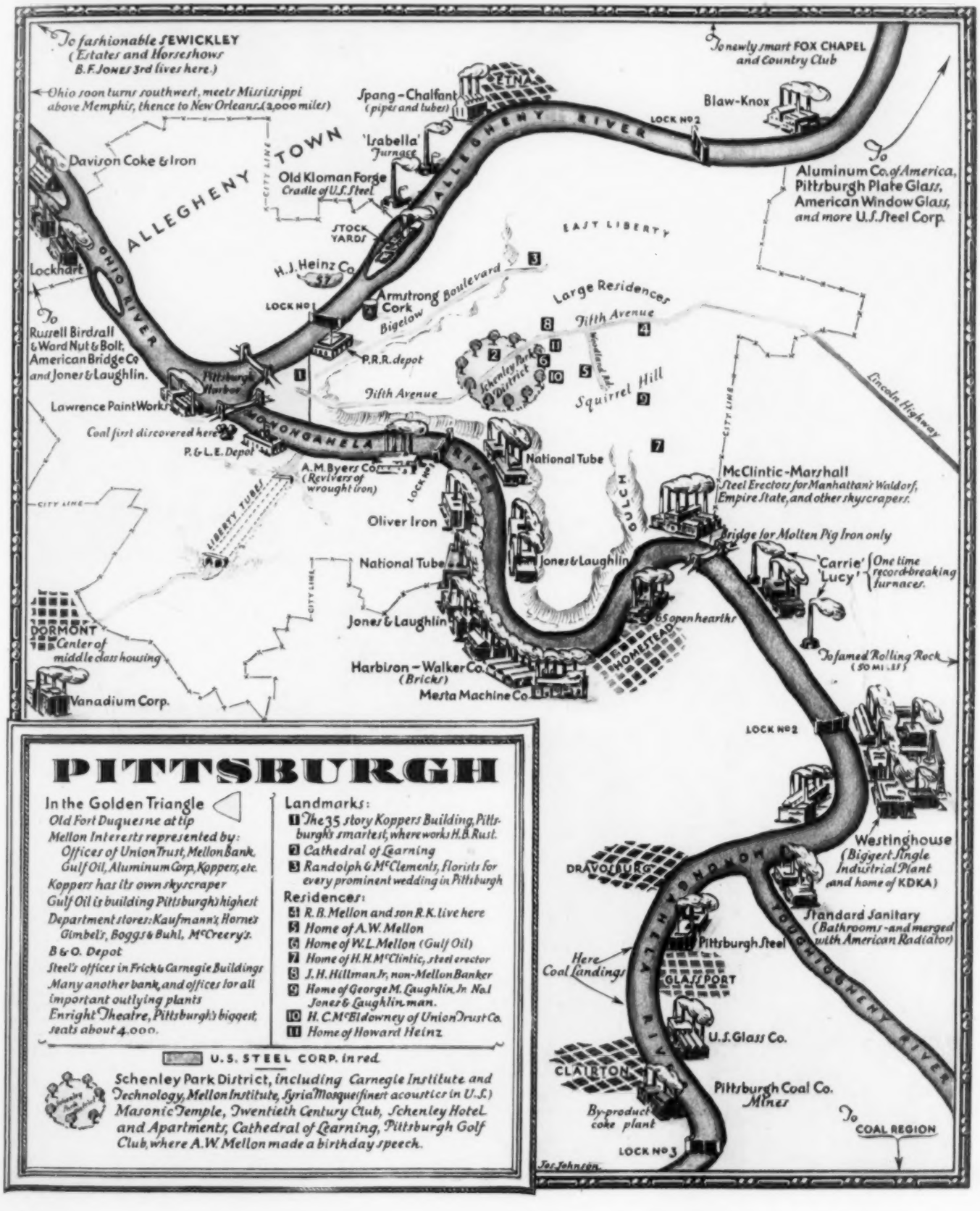
Photos Pittsburgh Aerial Survey

ABOVE: THE GOLDEN TRIANGLE

Cradle of the West, where Rivers Allegheny (in background) and Monongahela (in foreground) join to form the continent-piercing Ohio River. Here the French held Fort Duquesne. Here the continent was finally conquered for the Anglo-Saxon race. Here Washington learned the military tactics that defeated Cornwallis.

BELOW: A SWEATY RIVER

Section of the Monongahela, showing one of the many plants of Pittsburgh's aristocratic independent, Jones & Laughlin, a few miles above the Golden Triangle. The numberless chimneys along this river look like a forest, and behind them the laborers' houses perch on the hills.



PITTSBURGH

In the Golden Triangle

Old Fort Duquesne at tip

Mellon Interests represented by: Offices of Union Trust, Mellon Bank, Gulf Oil, Aluminum Corp, Koppers, etc.

Koppers has its own skyscraper

Gulf Oil is building Pittsburgh's highest

Department stores: Kaufmann's, Hornes Gimbel's, Boggs & Buhl, McCreery's.

B & O. Depot

Steel's offices in Frick & Carnegie Buildings

Many another bank, and offices for all important outlying plants

Enright Theatre, Pittsburgh's biggest, seats about 4,000.

Landmarks:

1. *The 35 story Koppers Building, Pittsburgh's smartest, where works H.B. Rust.*
2. *Cathedral of Learning*
3. *Randolph & McClements, Florists for every prominent wedding in Pittsburgh*

Residences:

4. *R.B. Mellon and son R.K. live here*
5. *Home of A.W. Mellon*
6. *Home of W.L. Mellon (Gulf Oil)*
7. *Home of H.H. McClintic, steel erector*
8. *J.H. Hillman Jr, non-Mellon Banker*
9. *Home of George M. Laughlin Jr. No.1 Jones & Laughlin man.*
10. *H.C. McElwowney of Union Trust Co.*
11. *Home of Howard Heinz*

U.S. STEEL CORP. in red.

Schenley Park District, *including Carnegie Institute and Technology, Mellon Institute, Syria Mosque (finest acoustics in U.S.) Masonic Temple, Twentieth Century Club, Schenley Hotel and Apartments, Cathedral of Learning, Pittsburgh Golf Club, where A.W. Mellon made a birthday speech.*

Publishers Photo Service

FOR THE NEXT SEVENTY-FIVE YEARS

. . . here, in the Schenley district, the destiny of the new Pittsburgh, the technological city, will be evolved. The emerging Gothic spire is the new Cathedral of Learning, built by all classes of citizens to house the University of Pittsburgh. Around it are the buildings of Carnegie Tech. Near it will be the Grecian temple of the Mellon Institute.

(Westinghouse and Heinz estate, $300,000 each; U. S. Steel and Gulf Refining, $250,000 each), tycoons, managers, school children, Magyars, Slovaks, miners.

Even so, this great Salesman-Educator Bowman had no land for his Cathedral, and he had no Rockefeller to add his millions to the people's thousands. But one day it was obscurely announced that those fourteen conspicuous acres that Frick had chosen, now valued from $4,000,000 to $5,000,000, had been acquired from his estate for the Cathedral of Learning. Those who really knew their Pittsburgh nodded wise heads. The donors were, of course, the Mellons.

The facts in that story, which are so obvious to Pittsburghers and which might be missed by outsiders and which are absolutely fundamental, are two: (1) the brass-knuckled steel barons of the 19th century have left town; (2) the Mellons remain.

Every Washington correspondent who has ever interviewed the Secretary of the Treasury knows that his most apparent characteristic is gentleness. Everyone who knows Richard B. Mellon, venerable chief executive of the Mellon empire, knows that he is a gentle man. Neither A. W. nor R. B. likes rough-and-tumble. The same is true of their associates—you find at the head of the great Mellon companies mild men—often, like the Mellons, slight of stature. There are exceptions. But dynamic, magnetic, brilliant are adjectives that can rarely be applied to the administrators of the Mellon Raj.

And this leads us, unwillingly, to a generalization. Pittsburgh is a gentle city.

Blank & Stoller

RICHARD B. MELLON

. . . who, at seventy-two, is chief executive of Mellon interests. In his youth he found himself at Bismarck, North Dakota, then the end of the railroad line. Promptly he founded Bismarck's first bank, which still flourishes. But since then he has found in Pittsburgh plenty of room for financial enterprise and new things of every sort.

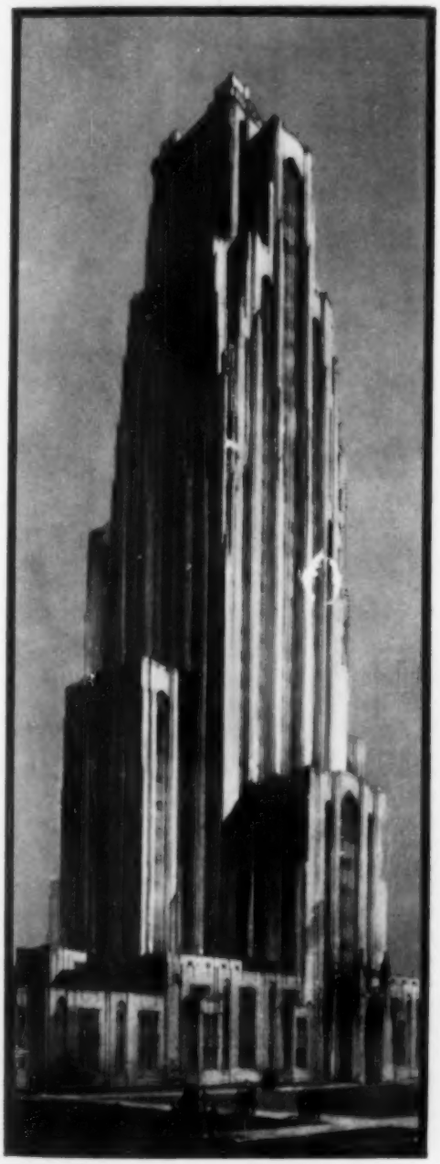
I.—The City Is Located

One morning in 1801 an American ship put into Leghorn, Italy, and presented her papers at the customhouse. The swarthy customs officer scratched his head, went to look for a map, finally returned to the ship's captain and had him arrested. "Son of a dog," he said, "your papers are forged. There is no such port as Pittsburgh."

But indeed there was. The ship's captain produced his own map of the U. S., pointed to the Gulf of Mexico, led the astonished Italian 1,000 miles up the Mississippi to the mouth of the Ohio, led him another 1,000 miles, past the tip of Illinois, past Evansville, Louisville, Cincinnati, to a place where the River Allegheny and the River Monongahela joined. At an apex of land pointing westward, the captain's finger stopped. "There, sir," he said, "is the port from which I cleared."

Over the destiny of this port, Nature must have brooded profoundly. She deposited iron, manganese, limestone near-by; she submerged forests and fish so that coal, oil, and gas could be had by an easy stretch of the industrial hand. She caused the port to lie in the only easy pass through the Alleghenies, whether by land, water, or air. She placed it so that within 500 miles (a forty-eight-hour freight haul), 58 per cent of the modern Union lives and does business, and 47 per cent of all Canada. As a result, the people who came there to live now produce 40 per cent of the nation's bituminous coal, one-third of its by-product coke, a quarter of its

CHANCELLOR BOWMAN: HIS CATHEDRAL OF LEARNING IN SCHENLEY



steel, nearly half of its pipes: more iron, steel, glass, tin plate, air brakes, fire brick, white lead, preserved foods, cork, aluminum, railway signals, vanadium, and bituminous coal than any other city in the world. Pittsburgh's harbor clears 33,741,000 tons annually, surpassing the tonnage of either Suez or Panama. At this distributing point a local commission house grew into American Fruit Growers (Blue Goose), largest fruit and vegetable distributors in the world. And a gentleman respectfully referred to as R. B. toys with the theory that half the fortunes of America originated in this area.

Formerly one of the most beautiful sections of America, much of the Pittsburgh district has been sheared and shorn. It is spattered with semi-cities of frame and brick, tangled with railroads, punctured with factories. Smoke has killed the evergreens; the grass up the hillsides, where occasional laborers' houses are perched like mountain goats, is scrawny and barely green. The region smoulders; the rivers give it life. Covered wagons followed the rivers; the railroads have followed the wagons; the factories have dug themselves in between the railroads and the abrupt hills.

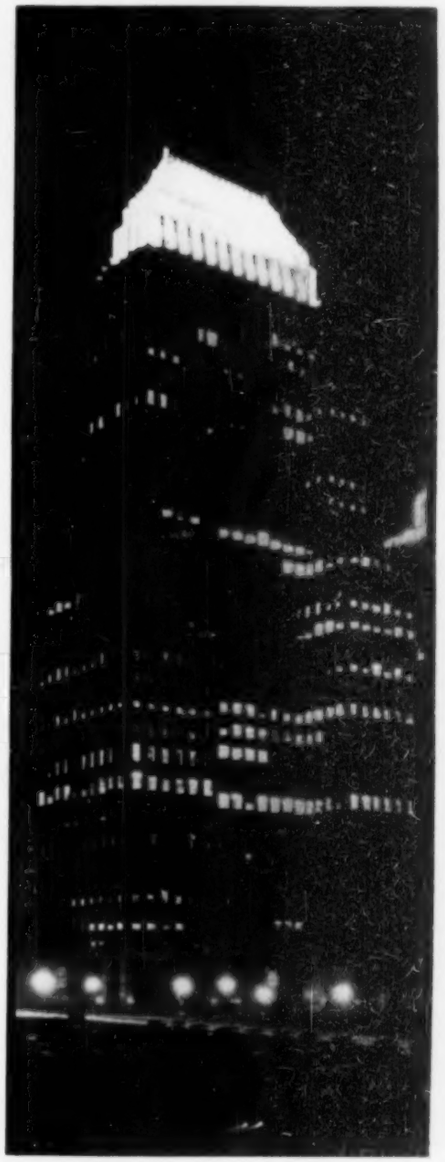
As in New York everything is high, in Pittsburgh everything is long. The Westinghouse plants are strung out along Turtle Creek a distance of nine miles; the U. S. Steel Corp., finding concentration hopeless, has its coke plant, blast furnaces, rolling mills, tube, wire, wheel, and bridge plants scattered up and down four rivers and at strategic points in the immediate provinces. Jones & Laughlin, Pittsburgh's proudest independent steelmaker, has one huge plant almost at the doors of the financial district, another at its own model town of Aliquippa, half an hour's train ride down the Ohio River. There is no human plan in the skein of chimneys, interconnecting railways, tunnels, and boulevards; there is no plan at all, except that which Nature laid down when she coursed the rivers.

II.—The Human Pattern

The rivers join. On the apex of land so formed rise the spires of a financial district that controls $1,250,000,000 of industrial investment, in the buildings called Grant, Koppers, Oliver, Carnegie, Frick. Around it, across both rivers and up the slopes behind, spreads a city of 670,000; around this a solid metropolitan area, including four cities and 122 municipalities, all of which, barring political accidents, will presently emerge as the fifth city of the land with a population of 1,400,000.

Up and down its sweaty rivers, Pittsburgh carries on such a tangle of industries that in describing them one Pittsburgh directory has divided them into 5,804 *classes*. But everything has to do with something else. The coke ovens are linked to the open hearths, the blast furnaces to the coke ovens. Because furnaces are lined with brick, here is Harbison-Walker, one of the largest refractories in the world. With one hand, Westinghouse

H. B. RUST: HIS KOPPERS CATHEDRAL IN THE GOLDEN TRIANGLE



DAVID B. OLIVER

Oldest steel and ironmaster alive, who uniquely antedates the "age of steel" by some forty years. He lives in Allegheny Town.

Courtesy Jones & Laughlin Steel Corp.

B. F. JONES III

Grandson of B. F. Jones, founder of Jones & Laughlin, who, as largest inheritor of Jones & Laughlin stock, exemplifies Pittsburgh inheritances.

P. & A.

GEORGE G. CRAWFORD

President of Jones & Laughlin and, uniquely among the executives of this family corporation, a former U. S. Steel man.

Courtesy Carnegie Steel Co.

I. LAMONT HUGHES

As president of the vast Carnegie Co., he typifies the captains of the U. S. Steel empire unified at 71 Broadway, New York.

Underwood & Underwood

JAMES A. FARRELL

The present president of U. S. Steel had, of course, a Pittsburgh training (with Oliver Iron & Steel) and visits Pittsburgh at least twice a year.

Keystone

ALBERT C. LEHMAN

President of Blaw-Knox Co., one of Pittsburgh's leading specialized independents, making $17,000,000 worth of steel for concrete construction, etc.

Electric buys enough steel to ship 900 carloads of finished products a month; with the other, it electrifies the steel mills.

But, of course, it is only at the top of industrial pyramids that individuals become conscious of the intimate connection of all parts. Stating it in terms of people, for most of whom there is a precisely allotted task, the Pittsburgh area includes about 300,000 families, of whom perhaps 200,000 are supported by industrial rather than commercial employment. Of 200,000 industrial workers in 1928, the largest groups were:

Carnegie Steel	23,678
Westinghouse Electric	18,376
Jones & Laughlin	17,152
National Tube	10,187
Oliver Iron & Steel	10,057
Pennsylvania Railroad	5,413
Westinghouse Air Brake	4,635
Pittsburgh Coal	3,648
Duquesne Light	3,164
McKeesport Tin Plate	3,099
Union Switch & Signal	2,959
Allegheny Steel	2,738
Pressed Steel	2,603
H. J. Heinz	2,219
Pittsburgh Terminal Coal	2,217
West Penn Power	2,176
Spang-Chalfant Co.	1,670
U. S. Glass Co.	1,548

Joined together in a mysterious economic present, Pittsburghers have, more than most industrial populations, a patriarchal background. However new Pittsburgh may be today, it is possible to trace the original pattern from living evidence. There was once a town across the Allegheny River whose estates spread their lawns down to the river banks. It was called Allegheny Town, and now that the estates have disappeared and the town has been incorporated into Pittsburgh, the district still goes by the old name. Where the wide lawns used to be are warehouses, factories, messy shops, and slums. Yet a dozen families of great age and power live right in the center of it, because they came from there in the first place.

The most notable person living in old Allegheny Town is old David B. Oliver. He is the oldest living man in the world of steel. He is ninety-six. Not only before the birth of steel, but before the birth of the Carnegie Co., before even steel was manufactured in Pittsburgh, Mr. Oliver was an ironmaster. For fifty years he was prime mover of the board of education; for sixty years he lived with Mrs. Oliver, mother of presidents and vice presidents of Oliver Iron & Steel. His brother was the late Henry Oliver, who bought all the Messabi iron options for Carnegie; and his niece, Edith, is Mrs. Henry R. Rea, the richest widow in Pittsburgh. She owns more land on the Golden Triangle than even the Mellons own. Her $1,000 a day taxes to the city of Pittsburgh surpass anyone's municipal taxes, and the busy Oliver Building is hers.

Near David Oliver in disreputable Allegheny Town lives Mrs. Henry Chalfant, wife of the son of the founder of Spang-Chalfant, which is about as old and respectable as

[*Continued on page 135*]

Ewing Galloway I

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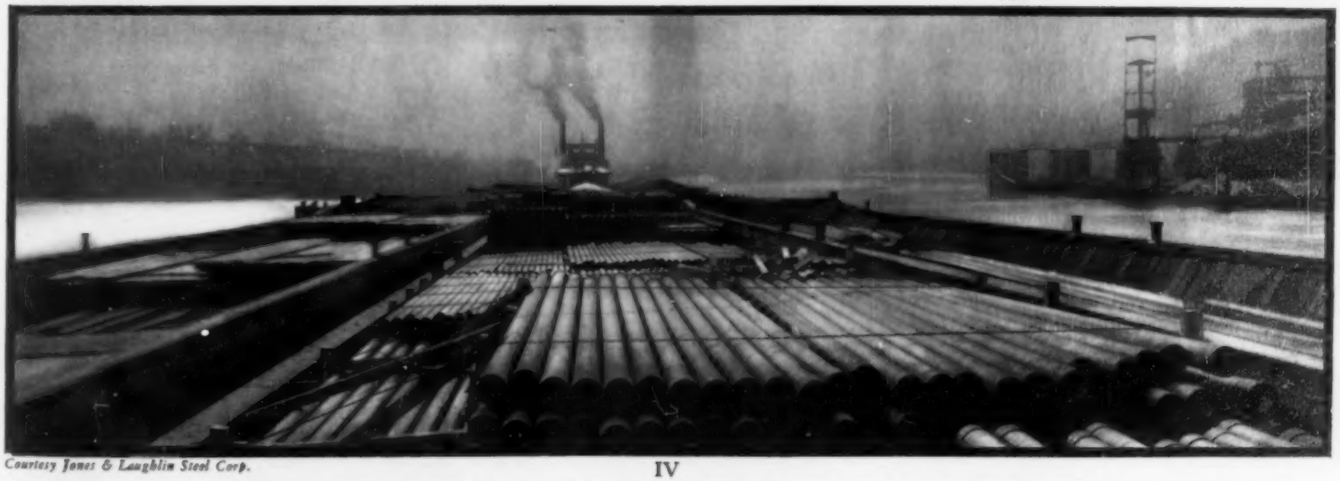
Publishers Photo Service III



Courtesy Jones & Laughlin Steel Corp. IV

SCENES FROM THE CITY THAT MAKES ALWAYS PART OF SOMETHING ELSE

I.—Glow from the open hearths at night. Sometimes the steel sheds seem to be on fire. II.—Some prima donnas of the steel industry—pig iron blast furnaces of the Carnegie Co. III.—Pigmy man ladles his molten steel into ingot molds. After it solidifies, it will be rolled to shapes. IV.—B. F. Jones Jr. rediscovered the Pittsburgh rivers. This Jones & Laughlin outfit is headed down the Ohio 2,000 miles to the Gulf of Mexico. The total value of the tow is over $1,000,000.

Pittsburgh Aerial Survey

.I.

I.—"Rolling Rock," fifty miles from Pittsburgh, was formerly the Mellon estate, stocked with fish and game. Members of the family were in the habit of asking their friends out for the week-end, but their invitations were so frequent as to be embarrassing. R. B. therefore turned the estate over to a board of governors and converted it into a country club whose members hunt, fish, swim, play golf and tennis at their ease. Near-by are stabled some of America's finest horses and kenneled some of America's finest hounds.

II.—Not a battleship steaming up the Allegheny, but Herr's Island, on which are located stockyards, soapyards.

III.—This is Koppers Seaboard Coke Co.'s plant (foreground) at Kearny, New Jersey, in the New York harbor: a symbol of the extension of Pittsburgh's interests throughout the nation.

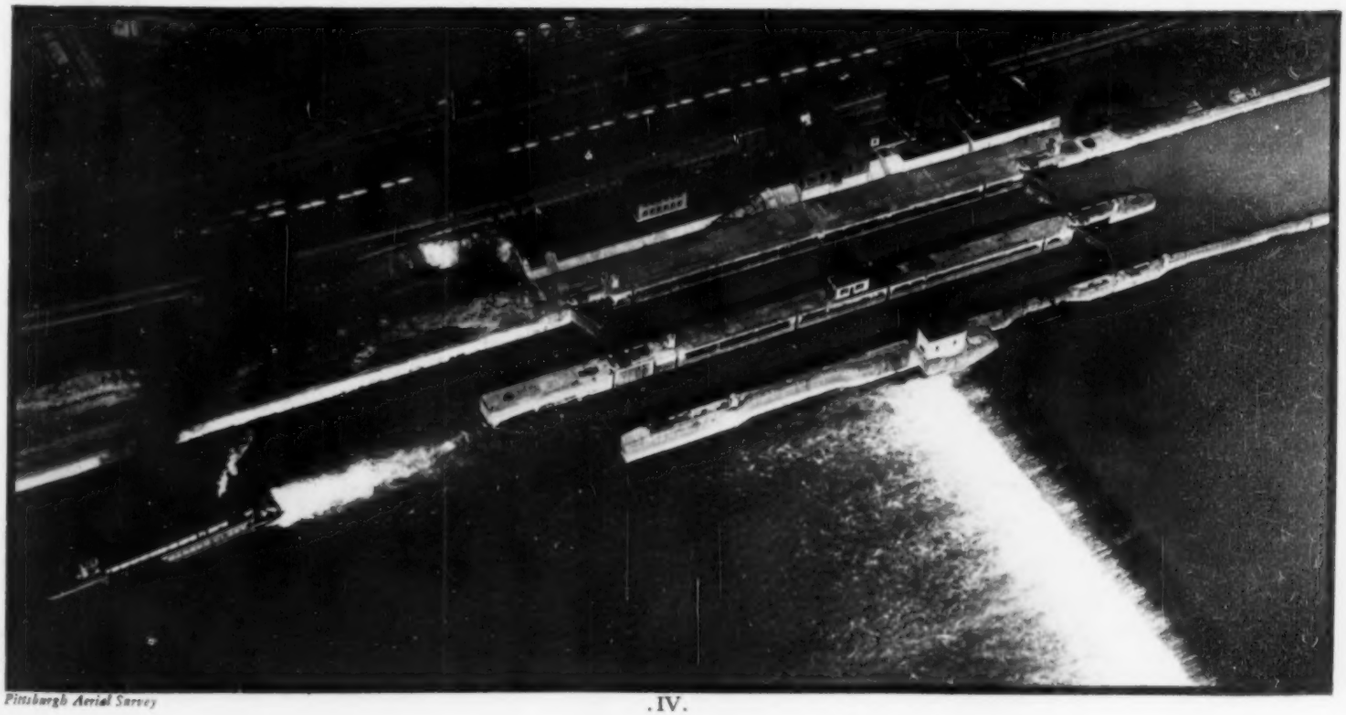
IV.—A lock on the Monongahela near one of McClintic-Marshall's plants. This is how Pittsburgh has been linked to tidewater and is one of the causes for the huge tonnage of the Pittsburgh harbor, exceeding Suez or Panama. Note the stern paddle wheel on the tug to the left.

Pittsburgh Aerial Survey

.II.

Fairchild Aerial Survey

.III.



Pittsburgh Aerial Survey

.IV.

London Daily Mirror

VISCOUNT ELVEDEN

London Daily Mirror

LORD AND LADY IVEAGH, LADY PATRICIA AND LADY BRIGID

THE ORIGINAL TRADE-MARK

London Daily Mirror

LADY HONOR GUINNESS

London Daily Mirror

London Daily Mirror

GUINNESSES AND WEDDINGS

Most spectacular of the many spectacular events in which London's gay Guinnesses participate are their weddings. They are always attended by a cordon of smart bepearled bridesmaids, who generally contrive to look more smart in tweeds. The parties surrounding a Guinness wedding are memorable. No stout is drunk, but much champagne; and on one long-remembered occasion, because of lack of glasses, the wine was drunk from radiator caps. (Above, center: Mr. Philip Kindersley and Miss Oonagh Guinness; below, center: the Earl of Ava and Miss Maureen Guinness. Right: Mr. Brinsley Plunket and Miss Aileen Guinness. Left: Mr. Loel Guinness and the Hon. Joan Yarde-Buller. Alone, Meraud Guinness had no social wedding.)

International

MERAUD GUINNESS

London Daily Mirror

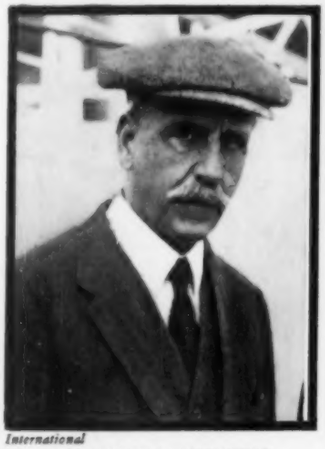
London Daily Mirror

London Daily Mirror

MR. WALTER GUINNESS (RIGHT) AND FRIEND

London Daily Mirror

WEDDING OF BRYAN GUINNESS AND HON. DIANA FREEMAN-MITFORD



International

BENJAMIN S. GUINNESS

International

MRS. BENJAMIN S. GUINNESS

London Daily Mirror

KENELM LEE GUINNESS

London Daily Mirror

SIR ALGERNON LEE GUINNESS

Bright Young People

Against their homely background of stout, the Guinnesses brightly glitter. And London society has found new leaders.

IT IS a paradox to delight a Chesterton that the biggest British brewery isn't in Britain and it doesn't brew beer. The brewery of Arthur Guinness Son & Co., Ltd. is British-owned, and it is the largest brewery in the world, but it is situated in the Irish Free State and forms, with the tractor factor of Henry Ford, the chief export business of that troubled dominion.

Guinness brews stout or porter, a thick dark beverage containing about 8 per cent alcohol, called porter because of its extreme popularity with 18th century navvies, sweeps, draymen, and porters. Porter is a London drink and a paternal English Parliament fostered the spread of London porter in Ireland by placing a duty of 5s. 6d. per barrel on all porter brewed in Ireland. In 1777 while the rebellious American colonies were gradually convincing Britain that the indiscriminate taxation of her dependencies was not always wise, the Irish brewing taxes were reduced. A Mr. Arthur Guinness who brewed ale and table beer in an ancient brewery at St. James's Gate, Dublin, undertook the manufacture of Irish porter.

The Guinnesses were Protestants and on excellent terms with the leisurely, moneyed English landlord rulers of Ireland. The rumble of discontent that was to burst so bloodily, so hopelessly in the Irish insurrection of 1793 was already stirring. No sooner did dark tankards of Guinness appear in Irish alehouses than Dublin wags labeled it "Guinness's Black Protestant Porter." Arthur Guinness spoilt the alliteration of this by brewing his porter stronger and calling it stout. To counteract the suggestion of black Protestantism and toadying to the English, he adopted for a label, later a registered trade-mark, that most sacred of Irish patriotic relics, the minstrel harp of Brian Boru, the harp that once through Tara's halls the soul of music shed. There was still another reason why devout Dubliners accepted Guinness's stout. The brewery was at St. James's Gate, and in the ancient days when

[*Continued on page 129*]

Ale, Beer, Stout

A venerable beverage and a venerable industry provide one-tenth of England's revenue. The King and the Church have given their sanction, and in America Mr. Pabst awaits the end of prohibition and installs $1,000,000 worth of brewing machinery.

DR. SAMUEL JOHNSON stood at an auction desk in the cask yard of the old Anchor Brewery in London and fixed the frieze-coated, cocked-hatted bidders with a rheumy eye.

"We are not here to sell a parcel of boilers and vats," boomed the Doctor, "but the potentiality of growing rich beyond the dreams of avarice."

Brewers in America have grown rich beyond Dr. Johnson's wildest dreams. They have wielded enormous political influence, been useful, diligent citizens, been much beloved, but, until very lately (and even now the barriers in some quarters are not altogether let down) they have been rejected by what newspapers vaguely refer to as Best Society. Those bitter protestants who founded these states were so convinced that the liquor which they drank in such Gargantuan quantities was such evil stuff that all who trafficked in it were evil men. Yet none can deny the rebuttal offered this argument by such a family as the Busch family of St. Louis. They have probably done more for St. Louis than anyone since the Jesuit fathers landed there in canoes. Hospitals and schools are thankful to them. And yet, although they move in a small and brilliant society, they have never achieved the impregnable position enjoyed by the brewers of England. In England, on the other hand, British distillers have so frequently been ennobled that the phrase "from beerage to peerage" is as trite as it is an obvious rhyme. The stout-brewing Guinnesses are undisputed leaders of London society. Colonel Gretton of Bass Ale is a power in the Conservative Party—the list is endless. Certainly no such national recognition as is accorded the English brewers has yet been given their American confreres.

This is not difficult to understand. Man has brewed beer as long as man has baked bread and almost as long as he has worshiped God. In England, particularly, brewing was one of the important duties of the medieval church. Beer, to the 14th century yeoman, was both a food and a sacrament. On Christmas Eve, sniveling, shivering villagers would gather under the church porch and shout from the bottom of their hearts:

Bring us in no brown bread, for that is made of bran
Nor bring us in no white bread, for therein is no gain
But bring us in good ale, and bring us in good ale
For our blessed Lady's sake, bring us in good ale.

Bring us in no bacon, for that is passing fat
But bring us in good ale, and give us enough of that.
And bring us in good ale, bring us in good ale,
For our blessed Lady's sake, bring us in good ale.

Bring us in no capon's flesh, for that is often dear,
Nor bring us in no duck's flesh for they slobber in the mere:
But bring us in good ale, and bring us in good ale,
For our blessed Lady's sake, bring us in good ale.

The good priests brought them in good ale. Besides the normal brewing which convents and monasteries did for their own use, there existed in Plantagenet and Tudor England an institution known as Church Ales. Feasting, to the medieval mind, was as much a part of Christian duty as fasting. Theologians argued that a man who fasted after the fifth hour of a feast day was liable to excommunication. That poverty should be no bar to feasting, the churches brewed ales and distributed them freely on the three great Feast Days: Christmas, Easter, Whitsuntide. It was considered a worthy charity to leave bequests for the perpetuation of Church Ales. To this day if you visit Chalk Church near Gravesend, you will see over the western door a little cross-legged goblin grinning over a flagon of ale. He commemorates a "Give Ale" bequeathed by one William May in 1512, that there should be "every year for his soull, an abit; and to make in bread six bushells of wheat, and in drink ten bushells of malt, and in cheese twenty pence, to give to poor people for the health of his soull."

The Church Ales were abused, of course, as the good things of this earth so often are. Church wardens obtained the right to sell Church Ale to obtain money for their parishes. The Reverend Sabine Baring-Gould, who wrote the words of *Onward Christian Soldiers* and was a prodigious antiquary, reports that it was not uncommon in the west of England for the whole south aisle of churches to be filled with beer casks on Whitsunday, with tapsters and alewives knocking out bungs and filling canikins right through morning service. Only under the leadership of harsh-voiced Oliver Cromwell, himself the son of a layman brewer

Wide World

PICKING HOPS AT WATERINGBURY, KENT

Because of their hard leaves and distinctive flavor, only the female hops are of value to brewers. But, of course, they have to continue to plant the useless males.

and a gentleman farmer, were the Church Ales discontinued.

If space permitted, we might carry on this connection between beer and the Church indefinitely. Since innkeepers invariably brewed their own ale until the foundation of the great breweries in the 18th century, the early history of brewing is the history of the inn, and the earliest inns either *were* the monasteries or were run by the monasteries. From the beer-brewing monastery came both the modern inn and the modern hospital—but this should be sufficient to show the great background of respectability which surrounds brewing in Great Britain. Brewing is still under royal patronage; the late King Edward VII was officially a Master Brewer and so is the present Prince of Wales. King George V has under his personal patronage the Licensed Victuallers Benevolent Institution, an asylum for elderly publicans and retired barmaids. Church and King alike endorse English beers. There are no higher sanctions.

Let it be at once understood that the beer which these great and respected brewers, whom we are about to study, make and the beer which most of the rest of the world drinks are two very different things. In Germany, America, France, Italy, Mexico, when we say beer, we mean lager beer, literally, stored beer. When you ask for beer in Great Britain or talk about beer, what you mean and what you get is ale and the precise difference is this:

> *Ales* are brewed at a comparatively warm temperature in an open vat with a type of yeast which rises to the surface during fermentation.

Labels courtesy Twenty-one

THE BASS LABEL

. . . claimed as the world's first registered trade-mark.

Courtesy Metropolitan Museum of Art

THE HALF MOON INN—*BY T. M. ROWLANDSON*

. . . forerunner of today's English tied house (a pub owned by a brewery and therefore committed to push sales of the brewery's product). Guinness has no tied houses, but Guinness may boast that it is sold everywhere.

> *Lager* beer is brewed in a closed vessel at a temperature just a little above the freezing point, with a type of yeast which sinks to the bottom.

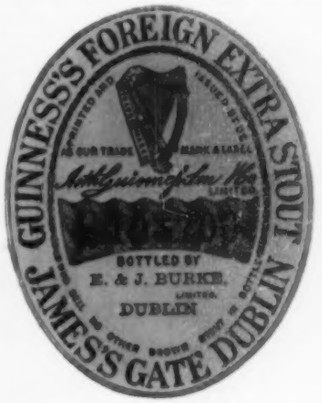
Lager has a secondary fermentation in the cask and must be stored for two or three months at a temperature of about fifty-five degrees. Lager beer is a brighter, cleaner-tasting drink with a low alcoholic content. It must be drunk ice-cold. Ale is a rich, mealy drink and a practical intoxicant, which should never be iced. It is best lukewarm from a pewter mug. There is nothing intriguing about this drink which has had such a profound effect on British literature and British life. It is sturdy, stodgy stuff. But it produces about one-tenth of the revenue of the British Government.

Sanctioned Burton

The fame of British ale is certainly spread over the world. It is doubtful whether the little town of Burton-on-Trent enjoys a similar reputation. Although it should. Burton-on-Trent is to British beer what Detroit is to the American automobile business. There were brewed 24,530,155 barrels of ale in Great Britain last year, paying excise duties of £70,846,978 ($344,000,000). Fully one-third of this beer was brewed and one-third of these taxes were paid by the breweries of Burton. If King or Church wished to visit the shrine of this industry to which, as we have seen, they give sanction, it is to Burton that they would have to journey. And Mr. Snowden, when he thinks of his budgets, must often have Burton in the back of his head.

Burton-on-Trent in Staffordshire, an incorporated town of 48,909 souls, lies almost in the dead center of Britain, but it is connected with Hull and the sea by the Trent, which is navigable to tugs and heavy barges. It is conceivable that an unworldly stranger might stay in Detroit for a week and never realize that city's connection with automobiles. No one could possibly remain in Burton five minutes without realizing that beer is the be-all-end-all of the town's existence. It smells like all the saloons in the world rolled into one; its nine great breweries are its only industry. Those of its inhabitants who do not work in the actual brew houses are making the day hideous by hammering and chopping away in the town's great cooperage yards, working on the river quays, or driving puffing beer lorries over the cobblestone streets.

The basis of Burton's prosperity was her export trade. In the early 18th century when most of the present day breweries in Burton were founded, the town did a thriving business, shipping a light, heady ale that traveled well to Russia, Poland, Finland, and the cities of the



THE GUINNESS LABEL

. . . featuring Ireland's famed and beloved Harp of Tara.

Hanseatic League (Antwerp still consumes great quantities of Burton ale although her native beers are excellent). In 1827, a ship belonging to Bass & Co. was wrecked in the Irish Channel loaded with ale for India. Thrifty fisher folk salvaged many a keg and discovered that this was a stronger, better brew than they could get at home. That is why Burton ale today, from no matter what brewery, is still labeled India Pale Ale. Of the nine breweries of Burton, four are internationally important today.

August Bass

Proudest of all the Burton breweries is the firm of Bass, Ratcliff & Gretton. Even lesser breweries must admit that when the average person thinks of ale, he thinks almost instinctively of Bass. The first registered trademark in the world was the red triangle that marks every bottle of Bass & Co.'s Pale Ale. The second of all registered trade-marks is the red diamond that Bass, Ratcliff & Gretton use for all their thirteen other brews. It is Burton legend that to secure these coveted places, a loyal employee sat all night on the steps of the registrar's office before it opened in accordance with the Trade Marks Act of 1875.

Royalty smiled upon Bass. One of the company's greatest treasures is an oaken brewing vat, which bears, fixed to its steaming flank, a small cryptic bronze plate:

HIS MAJESTY
KING EDWARD VII
MASHED IN THIS TUB
22ND FEBY 1902

King Edward's mother cinched the ascendancy of Bass over its other Burton rivals by making Sir William Bass, grandson of the founder, Lord Burton. Chairman of Bass, Ratcliff & Gretton today and potentate of all Burton is sixty-three-year-old Colonel Rt. Hon. John Gretton, for the past twelve years member of Parliament for Burton. He inherited £3,000,000 from his father, John Gretton, head of the brewery before him. He looks not unlike Rudyard Kipling and is a Conservative of the Conservatives. With practically no sense of humor but a scrupulous sense of honor, Colonel Gretton is the grand old figure of Burton, where they call him "Honest John." In the House he never makes a speech more than five minutes long. He is a dyspeptic, hence a near teetotaler. Bass property covers 750 acres of Burton land; at capacity, the brewery produces 7,000 barrels of ale a day. Operating income runs to approximately £1,700,000 ($8,000,000) a year while income received from rents, interest on loans, and stock dividends amounts to another £500,000 ($2,500,000).

Friendly Worthington

Worthington & Co. of Burton reported a profit of £736,000 ($3,500,000) in 1928 (last available figures) after interest and dividends on preferred shares, but Colonel Gretton of Bass felt no jealous twinge, for in 1927 Bass and Worthington combined in an exchange of shares which left Worthington's managers free to manage the brewing and distributing of their ales and gave Bass the financial whip. Worthington and Bass, in fact, still sell in opposition in British pubs. In the past three or four years, Worthington has impressed itself on British beer drinkers by an elaborate and extremely clever advertising campaign. A Worthington bottle is thicker than a Bass bottle; it looks as though it held a dram or two more.

Rival Allsopp

Since the Bass–Worthington merger, their chief Burton rival is Samuel Allsopp & Sons, which is incidentally the oldest of all Burton breweries (established 1730). The manufacturing profit ran up to £213,960 ($1,000,000) in 1928, a notable increase over preceding years. Credit for the present sound position of Allsopp's is due to one man, seventy-six-year-old Sir William Barclay Peat, the chairman of the board, and Sir William is not a brewer at all but an accountant—the King's Accountant as a matter of fact. His firm, W. B. Peat & Co., has expanded from the simple business of accounting to the more exacting one of medicine man to ailing corporations. Worried directors, unable to pay a dividend on the ordinary shares since 1901, called in Sir William. So successful was he that in 1918 dividend payments were again instituted and have gradually been increased since.

Burghers of Burton remember Allsopp's as the leading figure in what was known as the Great Bitter Beer Controversy. In 1851, a Mr. Payen chilled the marrow of ale drinkers all over the world by announcing that small quantities of strychnine were used instead of hops to produce the bitterness in bitter beer. Samuel Allsopp & Sons rose in their corporate majesty and awfulness to quash this horrid canard. In 1853, Dr. Stevenson Bushman, a converted believer in the strychnine scandal, published a full retraction. Slyly he alluded to the fact that neither Bass nor Worthington had taken any part in the battle:

"Single handed they [Allsopp & Sons] have fought the battle of bitter beer, their brother brewers of Burton gracefully acknowledging their pre-eminence by allowing them unaided to take the post of danger."

Ind, Coope, the fourth

Ind, Coope & Co., fourth brewer of Burton, is another firm which has risen from the rocks of financial disaster, and of its resurgence there is an amusing tale. We have already seen how many of the earliest inns belonged to the Church. In 1910 the Bishop of Colchester discovered an inn, the Cock & Bell at Romford, that had actually been part of a church, a 15th century chantry house, still retaining its original beams and oak paneling. The Cock & Bell was a tied house belonging to Ind, Coope, but without a moment's hesitation they gave up their rights to the building, turning it over in fee

Wide World

BARLEY GERMINATING IN TANKS

Having lain in water for fifty hours, the barley is allowed to germinate for seven or eight days, after which the starch, chief ingredient of barley, mysteriously becomes suitable for brewing.

Courtesy Jacob Ruppert

WORT KETTLES

Wort is the sweet liquor extracted from the ground and mashed barley. Hops are added to the wort, then yeast for the fermentation, and the result, after much waiting and adjustment of temperature, is ale.

Wide World

THE OPTIMISTIC MR. FRED PABST SR.

. . . of the Pabst Corporation, who confidently expects the end of prohibition and is now installing in Milwaukee $1,000,000 worth of new brewing equipment.

simple to the Bishop of Colchester, who promptly restored it as Romford's parish house.

Now in 1910 Ind, Coope was in an even worse financial condition than Allsopp & Sons. They were actually operating in the hands of receivers, but no sooner did the Cock & Bell go back to the Bishop of Colchester than the Lord smiled on Ind, Coope & Co. They paid off their deficit; they retired their old stock; for the one public house which they gave back to the Bishop, they acquired forty more in 1924; they rose to the position of fourth biggest Burton brewer and now report annual operating incomes that approach £350,000 ($1,700,000).

Water into Ale

Mechanics of the Brewery.

FOR the making of good ale, the most important ingredient is neither pure malt nor good hops, but water. The science of brewing has become so exact that a skillful brewer can imitate almost any type of beer in existence, but he can't imitate the water of Munich or Pilsen or Vienna or Copenhagen—not quite. The living springs of Burton-on-Trent are considered so ideal for the brewing of ale that brewery chemists in less favored districts have taught their employers how to "Burtonize" their water. The main requisite for brewing water is that it must be hard. Soft water dissolves the starch and sugar in the malt too readily and makes the brew ferment too quickly. Dublin, the home of Guinness Stout, is a soft water city, but stout is a much sweeter and stronger stuff than bitter ale. In the U. S. the good German brewers of Milwaukee and St. Louis have found ordinary Mississippi water ideal.

The basic process of making beer is not much more complicated than the process of making soup. Zulus make beer. They take a gourd full of grain, dump it in a hollow log with a bunch of bitter herbs for flavoring, fill the log with water, wait for air-born yeast to ferment it, and then they drink it. Long centuries ago people discovered that stored grain which had begun to sprout (i.e., malt) brewed more easily and made better beer. These same early delvers in the art of brewing learned that while beer can be made of almost everything from rice to potatoes, barley made the best beer. And so John Barleycorn became a literary figure.

A malting in a modern brewery looks not unlike a giant deserted subway. From an acre of level cement floor, scrupulously clean, rise squat tiled pillars to support a vaulted ceiling. It is from the malting floor, by the way, that the first of these various rich smells arise which make brewing such an odorous industry. After being washed and soaked in cisterns for several hours, the barley is first piled in heaps on the malting floor to start germination. Brewers, who are used to it, compare the odor of malting barley to new-mown hay—that is one definition. Experts watch it constantly, regulate the temperature of the room. Malsters walk about the floor wearing special malting shoes of thick oak-pegged sole leather, spreading the grain out and turning it over with broad wooden paddles which are known to the trade as ploughing sticks. When the malt is complete, when the growing spear of grain is about half an inch long, it is shoveled into kilns and the life that has been laboriously created is scorched out. For brown ales and porter, a small portion of the malt is actually roasted. Malted grain must be ground, but very loosely, to about the consistency of bran.

At just what dim distant date brewers, who once used all the balms of Araby to flavor their beer, chose the wild hop flower as the ideal imparter of bitterness, nobody knows. At least three centuries ago, British brewers were quite as proud of what they called their "heavily-hopped English ales" as they are today, and hops had been used on the Continent even longer. Hops grow wild in the hedges nearly all over northern Europe, but there are only certain small districts where hops can be raised for brewing. There are hop plantations in Saxony and northern Bavaria, in Kent and Surrey, New York and Oregon. There are male and female, and it is only the stiff parchment-like petals of the *female* hop flower that are good for beer. Hop-growers, of course, must plant the useless males among the females, but four or five of these vegetable chanticleers are enough to pollenize an acre.

Kent is the hop garden of England. Motor through Kent in midsummer, and you will see mile on mile of fields that are green forests of vine-covered fifteen-foot poles. Moving like giants above the earth, the hop-men shuffle up and down the rows on ten-foot stilts, tying new lines to the poles. For most of the year hop cultivation is a simple

London Daily Mirror

BASS WEDDING

. . . of Mr. John Frederick Gretton (only son and maltster for the Rt. Hon. John Gretton, M. P.) and Miss Margaret Loeffer.

business requiring little labor, but once a year comes the hop-picking, "the poor man's holiday." Armies of unemployed laborers, men, women, children, and tramps looking for a free meal sweep down on the Kentish hop fields, as in the days before mechanical reapers, cotton-pickers swept across the South. Kentish farmers lock up their daughters and householders their silver, for hop-pickers are a motley lot. Indeed, the Kentish hop harvest is an important social problem. The British Government is not at all anxious to modernize the hop fields as they have been modernized in Oregon, where one machine can pick an acre of hop flowers in an hour. Hop-picking is simple, unskilled labor, anyone can do it, and the annual Kentish invasion is safety valve for the ever-pressing problem of British unemployment. London churches send special missions to the hop fields, welfare organizations send tents and blankets, set up community kitchens.

These are the raw materials: water, malt, and hops. For the actual brewing of beer, F. W. Salem's *Beer, Its History* describes the whole thing accurately in half a paragraph: "A certain quantity of malted barley is taken and ground, it is then mashed with hot water, the sweet liquor or *wort* extracted, a portion of hops added and the whole boiled until the preservative quality as well as the aroma of the hops is obtained. It is then allowed to cool, and afterwards fermented with yeast to produce the small quantity of alcohol it contains to give it life."

But the mutations of this system constitute the trade's jealously guarded secrets.

PAUL OLIVER AND OLIVE PALMER, PREMIER DUET OF THE AIR

SINCE DECEMBER 3, 1927, PAUL OLIVER (FRANK MUNN) AND OLIVE PALMER (VIRGINIA REA) HAVE FEATURED THE PALMOLIVE HOUR. FAMOUS IS THE PALMOLIVE HOUR; NOT SO WELL-KNOWN IS THE FACT THAT ALTHOUGH IT IS BROADCAST ON THE NATIONAL BROADCASTING CHAIN AND CLASSED AS A N. B. C. HOUR, IT IS ACTUALLY PRODUCED BY SOUND STUDIOS OF NEW YORK, INC., UNDER THE DIRECTION OF GUSTAVE HAENSCHEN AND FRANK BLACK, ITS ORIGINATORS

Radio Advertising

How many listeners to a program? How many purchases to a listener? Questions to which the answers have been obscured by radio's being not business but pleasure.

DURING the twenty-five years in which advertising has been recognized as a worthy calling, an incalculable quantity of research has been done on the magazine as an advertising medium. Thus the advertiser who wishes to purchase magazine pages has at his command an impartial and an authoritative circulation figure plus a less impartial but still very useful circulation breakdown in terms of where magazine readers live, who they are, how much money they make, and whether or not they like orange juice at breakfast.

Not so with radio. It is now eight years since the American Telephone & Telegraph Company began selling radio time in an attempt to meet the operating expenses of station WEAF. The Telephone Company charged $100 for a ten-minute talk and was promptly flayed by *Printers' Ink* for introducing an "objectionable" medium.

Radio advertising is still at a point in which it is possible to claim everything and to deny everything, and very difficult to prove anything. The magazine has learned to approach the topic of magazine advertising from the standpoint of the advertiser. The radio station has a very strong tendency toward approaching the topic of radio advertising from the standpoint of hoping that it may be able to keep the advertiser from spoiling the program. This point of view is of course changing, and the growing radio influence of the advertising agency is greatly accelerating the change. But radio's tremendous potentialities as an advertising medium will never be adequately realized until the broadcaster accepts the advertiser as something more than a snake of commercialism in an Eden of entertainment.

. . .

For purposes of summarizing the best contemporary information, the question of radio advertising is divided into two parts:

I.—How Many People Listen?

Takers of the 1930 census asked all families whether there was a radio among the household possessions, but the official radio census figure will not be released for some months to come. Meanwhile, however, the Electrical Equipment Department of the U. S. Department of Commerce has issued an estimate of 13,478,600 sets as of July 1, 1930. A typical radio method of reaching an audience-estimate from this statistic would be to multiply 13,478,600 by 4.1 (the number of persons per family) and thus demonstrate that a radio program will reach more than 50,000,000 hearers. An independent research organization—Crossley, Inc., emphatically not to be confused with the radio Crosley—uses a 3.1 listener-per-set figure, which is certainly a better figure for the advertiser who is interested chiefly in adults and from which the total radio audience would be estimated at 40,000,000. From a practical standpoint, however, the most vital radio statistic would be not the number of people reached by radio but the number of people reached by *a given radio program*. So let us see how far we can go toward determining this extremely elusive figure.

The advertiser who is going into radio on a national scale is likely to choose either the National Broadcasting Company network or the Columbia Broadcasting System network. National operates two major networks, the Red, headed by station WEAF, and the Blue, headed by station WJZ. The Red network includes twenty-one stations extending as far west as Kansas City and Lincoln. Eight of the thirteen Blue cities are also on the Red network. There are also six supplementary N. B. C. networks sold in units in connection with either the Red or the Blue basic chains and giving a national coverage through thirty-nine additional outlets. Columbia has only one main network, with twenty-five outlets in twenty cities. It also extends as far west as Kansas City and Omaha, covering much the same country as the rival National networks. Columbia has also its supplementary networks, with coast to coast coverage through forty-nine additional outlets.

But it is also possible for the advertiser to secure national coverage without appealing to either of the major networks. Indeed, the most extensive radio program now on the air (the Chevrolet hour on 138 stations) is handled neither by National nor by Columbia. It is a presentation of the World Broadcasting System, which, with its associated Sound Studios of New York, Inc., is a new and disturbing arrival in the radio field. By means of electrically recording its programs and sending them out on discs, the World Broadcasting System can give the advertiser as many stations as he wants to buy, including stations on both chains. We shall have more to say below concerning World Broadcasting and the vigorous competition which it is already giving to both National and Columbia, but meanwhile let us get back to the more immediate subject of radio audiences, while remembering that the advertiser does not need to think of broadcasting entirely in terms of the two major chains.

Both National and Columbia maintain that they reach approximately 90 per cent of all U. S. radios. But it is only in National or Columbia offices that this figure is accepted. The best evidence that the 90 per cent estimate is altogether too high is furnished by the Chevrolet program already mentioned. This program is taking 138 stations, or more than twice as many stations as the entire N. B. C. group. Chevrolet would not purchase 138 stations if it thought it could reach 90 per cent (or anything in the neighborhood of 90 per cent) of radios with the chain hook-up. It is therefore impossible to accept the National estimate of 10,467,000 sets on its Red hook-up or of 10,085,000 sets on its Blue hook-up or the Columbia figure of 13,147,500 Columbia sets.

It is also impossible to estimate how many sets the chains actually do reach. Fortunately, however, the government figures already referred to will soon supply an authoritative and detailed city-by-city radio census. Meanwhile, let us arbitrarily assume that a given advertiser knows that there are 8,000,000 sets in the territory covered by his broadcast, and let us see what he knows (or can find out) about the number of those sets that are tuned in on his program. Not all the sets in his territory are operating during his broadcast and not all of those operating are listening to his program. How much of his 8,000,000 circulation does he actually get?

The most reliable information on these questions is supplied by the already mentioned Crossley company, which is currently engaged in a radio survey prepared for the Association of National Advertisers, Inc., and a group of about fifty large advertisers who have a direct interest in the collection of impartial radio evidence. The Crossley company plans to interview 70,000 people, representing all classes and all types of localities, and has already tabulated results from 48,000 such interviews. According to the Crossley report, 75 per cent of radios are in daily use, or, in other words, the actual radio audience is equal to three-fourths of the total radio audience. Furthermore, Crossley reports that two radios out of every three are working every night. Sunday listeners are

© Photos International

KDKA: THE BIRTHPLACE OF BROADCASTING

Pioneer radio station was KDKA, which Westinghouse Electric & Manufacturing Company established in 1920. It was located in Wilkinson, suburb of Pittsburgh.

THE "LOG CABIN" OF BROADCASTING

An exterior view of the same KDKA station. It was a converted garage belonging to Dr. Frank Conrad. First great broadcast was the Harding election.

somewhat below the average; the other six days do not much differ. So our advertiser with 8,000,000 sets can count upon having 5,300,000 of those sets in action on the night he is broadcasting, but not necessarily on his hour or his program.

And there is a very decided hour-by-hour fluctuation, with the peak at about 9 P.M. Crossley figures that out of *all* radio sets, and on *any* given night:

1/6	are in use at	6 P.M.
1/3	are in use at	7 P.M.
2/5	are in use at	8 P.M.
1/2	are in use at	9 P.M.
1/2	are in use at	10 P.M.
1/3	are in use at	11 P.M.
1/4	are in use at	12 P.M.

During the 8 P.M. to 10 P.M. period, therefore, our advertiser can assume that of 8,000,000 sets in the area, nearly 4,000,000 are tuned in at his time, with an average of about 3.1 listeners each—a total of 12,400,000 listeners.

How many of those listeners are listening to his program? This is the final division and of course the most difficult, since the answer depends chiefly upon the program itself. The most popular program on the air is the Amos 'n' Andy program to which from 50 to 55 per cent of daily radio users habitually listen. No other program, however, rated more than 40 per cent and 25 per cent was very good. Mr. George Washington Hill (who hears in rehearsal and approves all his Lucky Strike programs) says that a good program will have 30,000,000 listeners where a poor program will have 8,000,000. However, let us assume that our advertiser has an A-1 program and let us credit him with attracting half of the listeners during his time. As half of 12,400,000 is 6,200,000, this final figure represents the actual audience.

In more general, and in simpler figures, out of every 100 families in the broadcast district, the advertiser who is on the air between 8 P.M. and 10 P.M. with a first-class program will have:

65-70 families on the air that night;
46-50 families on the air during his program;
23-25 families listening to his program.

• • •

Also included in the matter of radio listeners is the matter of cost per listener. Here, by granting the networks about 10,000,000 sets each (a generous estimate) and accepting the network philosophy that all the sets listen to all the programs of the network, we can obtain some remarkable set-per-dollar figures—something like 1,500 sets-per-dollar on the N. B. C. Red and 1,600 on the Blue (with supplementaries). Such figures are so misleading, however, that it is more intelligent to consider merely some representative radio appropriations and at least arrive at the scale of radio operations.

The advertiser who appears once a week, thirty-nine weeks a year, in half-hour periods on the most extensive N. B. C. hook-up, will spend for his time a little more than $250,000. His talent costs vary sharply with his program. The Chicago Symphony gets $3,000 per appearance. Talent on such programs as the Seiberling, Firestone, and Westinghouse hours cost more than $2,000. A good standard program is obtainable for $1,000. Suppose that our hypothetical advertiser is ambitious enough to put on a $1,500 entertainment. His talent will then cost about $60,000 and his total cost will be $310,000 for the thirty-nine-week period.

Some actual radio costs (time only) of notable 1930 radio advertisers are:

American Radiator	$210,000
Armour & Co.	250,000
General Electric	433,000
General Foods	260,000
General Motors	332,000
Quaker Oats	268,000

The 1929 newspaper and magazine appropriations of the same advertisers were:

American Radiator	$743,000
Armour & Co.	541,000
General Electric	4,170,000
General Foods	6,500,000
General Motors	18,630,000
Quaker Oats	1,450,000

It is obviously possible to do a thoroughly good radio job for very much less than it costs to secure national coverage in space. Few advertisers use the maximum hook-up, a group of between thirty and forty stations constituting a very considerable network. The time unit (once so universally considered an hour that all radio programs are still referred to as *hours*) has shifted to the half-hour. Mr. George Washington Hill and his Lucky Strikes continue to use the full hour, since Mr. Hill wants three selling moments and needs an hour for them, but full hours, though not unusual, are distinctly a minority. Another time trend (well illustrated by Amos 'n' Andy) is the fifteen-minute period, repeated on a daily or almost a daily schedule.

On the whole, the cost item on radio is far from being prohibitive. In the past, at least, money spent on radio advertising has been added to the general appropriation and has not involved sacrificing other media. The uncertainties of radio, rather than its expense, have handicapped it. We have already discussed the circulation question in radio. Let us now turn to the question of radio's selling force.

II.—DOES RADIO SELL?

How, when, and why the radio dollar returns.

Partly because a good many broadcasters are satisfied to check their radio investment against general goodwill (and the goodwill value of such programs as the A. & P. Gypsies, the Palmolive Revelers, or the Fleischmann-Vallee concerts is unquestionably very great) and partly because it is usually impossible to unscramble radio-made sales from sales of other origin, it is sometimes concluded that radio is not an efficient sales agent. This conclusion is, however, incorrect. Radio results not only in general goodwill, not only in institutional advertising, but also in direct and immediate sales. In this ill year of 1930, very few companies have any sales increases to report, so that before-and-after radio figures would be unfair and misleading. There are, however, a good many examples of radio results which make it impossible to doubt radio's selling capacity.

The best instances of radio as a direct salesman are furnished by spot broadcasts—that is, broadcasts intended to sell a given product in a given territory and within a given period. Two recent and shining examples of the spot broadcast are furnished by George Ziegler Co., Milwaukee candymakers, and Carson, Pirie, Scott & Co., Chicago merchants and manufacturers. The Ziegler Co. introduced *Betty Jane*, a new brand of box candy, with broadcasts over station WTMJ. Their program was built around a "contest," the orchestra playing various unnamed songs and the audience winning prizes by sending in identifications. At the end of five weeks, the Ziegler company had sold, in the Middle West, twenty-seven tons of *Betty Jane*, gave radio full credit for the success of their campaign. Carson, Pirie, Scott had somewhat the same problem. They manufacture *Bobolink* stockings and had decided to change *Bobolinks* from the seamless to the full-fashioned variety. They ran three broadcasts on WMAQ, Chicago, announced the new *Bobolinks*, and sold approximately 200,000 pairs in three weeks. Here are two excellent demonstrations of the fact that the listening audience is also a purchasing audience, that radio can be used to make direct and immediate sales.

It is true that radio stories from national radio advertisers tend to consist of brilliant but isolated examples. There is, for instance, the famous farmer who walked into a Cities Service station, said that any company supplying the fine music (at that time it was Goldman's Band) on the Cities Service broadcast was a good company, and took from his pocket $3,000 to invest in Cities Service stock. Even though it be added that Cities Service in April of 1929 traced to radio the sale of 29,000 shares of Cities Service common (of course without direct stock selling by air) and has distributed during the past year more than 150,000 copies of its budget book, the 1929 bull market was a factor in the stock sales and the budget books come back again to goodwill. A similar impressive but isolated instance is found in the Tide Water Oil Company broadcast which, celebrating the return of Admiral Byrd, distributed—from one program—more than 150,000 souvenir booklets. There are innumerable such radio experiences, ranging from those just mentioned to instances such as the story of the 500 pairs of Interwoven Sox ordered by a Richmond, Virginia, magistrate as a Christmas present for the police department shortly after Billie Jones and Ernie Hare, pioneer radio gag team, had ceased being the Happiness Boys and turned into the Interwoven Pair.

But there are also examples of radio-inspired purchases not dependent upon an individual or a temporary enthusiasm. Possibly the simplest method of tracing radio results in their more general form is to begin with campaigns obviously suited to broadcast advertising, to continue through products that do not immediately suggest a radio tie-up, and to conclude with products which radio has not as yet successfully distributed. The second class is of course by far the largest and represents also the greatest undeveloped possibilities.

Obvious radio "naturals" are such campaigns as the Radio-Keith-Orpheum hour, the Atwater Kent and Majestic hours, and the Roxy and Capitol theatre hours. Here the sponsor is selling, directly or indirectly, entertainment itself, and an RKO recital by (for instance) Ruth Etting evidently combines sales and amusement in the most thorough and admirable manner. From the same standpoint, Mr. A. Atwater Kent sells Atwater Kent sets directly (you can hear this and every other program perfectly with an Atwater Kent set), indirectly (by stimulating set sales through an attractive broadcast), and institutionally (through association with the Atwater Kent "quality" music). In these and similar cases radio is entirely an opportunity and not at all a problem.

And almost equally well adapted to radio are programs in which the broadcast permits logical and extensive sampling of the product. The Newscasts and Newsactings of *Time*, the current events talks of the *Literary Digest*, and the campaign in which *True Detective Mysteries* presented dramatizations of its thrillers are applications of the sampling idea. Inasmuch as the *True Detective Mysteries* campaign ran the circulation of the magazine from 190,000 to 690,000 in a six-month period, the effect of such programs can hardly be disputed.

It is also frequently possible for the advertiser to discover a radio tie-up which while not so superficially apparent is fundamentally as logical as those already cited. The Metropolitan Life Insurance Co., for example, has distributed, through broadcasting, more than a million copies of its health booklets and

Courtesy National Broadcasting Co.

CONTROL BOARD AT N. B. C.'S FIFTH AVENUE STUDIO

Here is the studio's technical center of being. Here converge thousands of miles of telephone and telegraph wires, and here sits the control man who supervises the quality, the volume, and the clarity of every sound sent forth into the air. Every program of the network is under his control, and at a touch of his finger all sounds would cease.

VINCENT LOPEZ

BEATRICE BELKIN

Photos Courtesy National Broadcasting Co.

PHIL COOK

exercise charts. The Metropolitan makes no attempt to sell life insurance. It will not even give its salesmen the names of the people who write in for the booklets or apply those names to mailing list activities of any sort. But while Metropolitan is not selling *policies*, it is certainly selling *health*. In terms of policyholders who live longer and who are sick less frequently, it is getting an excellent return for its investment. The sponsor of a campaign such as the Metropolitan's must obviously be a leader in the field it occupies, but granted such leadership the possibilities of indirect selling are most extensive. The various institutes and associations, for instance (copper, brass, lumber, laundry, and whatnot), should find radio particularly well suited to the sale not of a company or of a product but of an industry and of the general services it renders.

A very different type of radio appropriateness is found in campaigns such as that fostered by the Benrus Watch Company. Here the product has no great radio tie-up (except the time-of-day information), but radio is particularly adjusted to the advertiser's appropriation. The Benrus company, after some years of magazine advertising, decided that their advertisements were not attracting enough attention. They could not afford to buy sufficient magazine space to make their campaign outstanding. With the beginning of the present year, they abandoned space advertising entirely, took a larger appropriation, and went into a concentrated air effort. Almost immediately dealers who had been previously unimpressed began to call for more Benrus watches, and dealers who had never carried the line began to stock it in reply to consumer requests. Furthermore, in those districts best covered by Benrus broadcasting, Benrus 1930 sales showed a slight increase over sales for 1929, despite the fact that some authorities estimate that the jewelry business in general has declined at least 50 per cent. In the present state of radio, it is possible for the relatively small corporation to be a conspicuous air advertiser whereas the same appropriation would give him an inadequate coverage on a national magazine basis.

We come next to the very large class of products in which radio offers no particular advantages. Indeed, it may be considered to offer distinct disadvantages on the theory that unless a product is particularly adapted to a painless selling talk, the program will either force too much selling upon an audience interested primarily in entertainment or will evaporate entirely into a vague and intangible goodwill. Here is rather a sound argument, since the advertising agency position that it is easy to make selling palatable and the broadcasting studio position that all selling is poisonous are so extreme and so contradictory that they prove nothing except the existence of a real problem. To this problem there are three main solutions.

In the first place, if the program itself is excellent, the audience will stand a considerable amount of undiluted salesmanship. The Fleischmann hour with Rudy Vallee,

VAUGHN DE LEATH

VIRGINIA GARDINER

Radio people feel that the real radio stars are those produced by radio itself. Vincent Lopez, with his familiar "Lopez speaking," rose to fame via radio. Beatrice Belkin, now of the Metropolitan Opera Company, belonged formerly to Roxy's Gang. Phil Cook, of the Quaker Oats hour, acts all the parts in the Quaker Oats radio drama. Virginia Gardiner is the featured actress in Death Valley Days, in which the Pacific Coast Borax Co. tells the story of the famous Twenty-Mule Team which hauled borax from Death Valley. Vaughn de Leath was the first radio crooner. She developed the crooning technique to save radio tubes, found that it also pleased the public. From the standpoint of the radio studio, no voice is a good voice until it has proved itself a good radio voice. Good stage or concert voices do not necessarily qualify. Radio has not as yet produced its Barrymore, its Bernhardt, or its Shakespeare. The Amos 'n' Andy sketch is frequently considered the closest approach made thus far toward a generic radio art. But radio eagerly awaits the development of true radio drama.

the Palmolive hour with Olive Palmer, Paul Oliver, and the Revelers, and the Lucky Strike hour with the Rolfe orchestra are three of the most attractive "talent" hours on the air. They all have continuities which the studio continuity writer would hardly recognize as such; they do not struggle through futile attempts at linking fox trots and waltzes with yeast, soap, and cigarettes; and, as radio programs go, they have a good many more seconds of straight sales-talk than the radio people would approve. Yet during the first three months of 1930, Fleischmann sales ran a little over 10 per cent in advance of corresponding 1929 sales. And Mr. George Washington Hill, American Tobacco Co. president, says that in his first two months of broadcasting (September and October, 1928, a period during which his newspaper advertising was curtailed), Lucky sales increased 47 per cent almost solely as a radio result. In short, a superlative program will atone for much salesmanship.

In the second place, it does not require much time for the modern advertiser to tell his story. The whole tendency of current advertising is toward the short, quick, immediately comprehended "message," instantly appreciated whether on the air or on the printed page. Mr. Hill's slogan about reaching for a Lucky instead of a sweet is a good illustration of the glorified slogan type of advertising which involves no lengthy argument, no extended presentation. Besides, it should be remembered that we are not considering radio advertising except as a complement to printed advertising. With very rare exceptions, the advertiser cannot afford to rely upon radio advertising alone, and for the very reason that his program does belong to his audience so much more than it belongs to him. But assuming that he is also employing printed pages, which certainly are his property and in which he can tell his story at whatever length he sees fit, the limited time at his command in a broadcast should be sufficient for him at least to repeat the high spots of his printed campaign. Thus the Fleischmann and Palmolive testimonials recited in the Fleischmann and Palmolive hours are excellent reminders of those same testimonials as they appear in their more effective newspaper and magazine forms, and give radio "copy" at least a reminder value similar (but much superior) to the reminder value of billboards, signs, and car cards.

Furthermore, it is sometimes possible for the advertiser to find in his product itself a legitimate story which can be inoffensively rehearsed at very considerable length. Thus a feature (in fact *the* feature) of the Davey Tree Expert program is the ten-minute talk which Mr. Martin L. Davey himself gives on trees. The Davey company admits that it introduced this talk "against all advice," and it is indeed easy to imagine the consternation that such a program-element would produce in the radio studio. Yet the Davey business for the first six months of 1930 (also Davey's first six radio months) was 15 per cent greater than its corresponding 1929 business, in

[*Continued on page 113*]

Tuesday, November 4, 1930

WJZ

Hour P.M.	*Program*	*Event*
6:00	Raising Junior **September 16, 1930*	In which Peter Dixon and Aline Berry (Mrs. Peter Dixon) dramatize the problems of Junior's rearing and diet for the Wheatena Corp.
6:15	Savannah Liners Orchestra *December 18, 1928*	In which Harold Sanford weekly directs a program of popular numbers for the Ocean Steamship Company of Savannah.
6:45	*Literary Digest* Topics in Brief—*February 24, 1930*	In which Lowell Thomas daily reviews the news for Funk & Wagnalls Company.
7:00	Amos 'n' Andy *August 19, 1929*	In which Freeman Gosden and Charles J. Correll nightly portray the complexities of Harlem life for the Pepsodent (tooth paste) Company.
7:15	Benrus Orchestra *August 12, 1930*	In which Sam Lavin weekly directs such numbers as *Get Goin', Lovin' You, I'll be Blue Just Thinking of You* for the Benrus Watch Company.
7:30	Phil Cook—The Quaker Man *January 1, 1930*	In which Mr. Cook, the one-man show, dramatizes the story of Pop Dingle and his son, Abner, and the city boy, Eddie, for the Quaker Oats Company.
7:45	The Adventures of Polly Preston *September 24, 1929*	In which Lucille Wall (Polly Preston) and Anthony Stanford (the secret service man) chase crooks and spys all over Europe for Nathaniel Fisher & Company (Polly Preston Shoes).
8:00	Pure Oil Orchestra *February 2, 1929*	In which Wayne King conducts and a male quartet fills the air with new and old-time favorites.
8:30	Big Guns *June 6, 1930*	In which N. B. C. presents war episodes written by Lawrence Holcomb of its staff and produced by Vernon Radcliff. Walter Glass is the hero-lieutenant and Charles Webster is the captain.
9:00	Tek Music *June 11, 1929*	In which Johnson & Johnson Company's orchestra under the direction of Murray Kellner are assisted by Lucien Schmidt, cellist; Bon Byron, tenor; and Vee Lawnhurst, pianist, in a weekly program of "parlor" melodies.
9:30	Death Valley Days *September 30, 1930*	In which the story of the famous Twenty-Mule Team which hauled borax from Death Valley 165 miles to the railroad is dramatized by Virginia Gardiner, Jack McBride, Wm. Shelley, John White, Vernon Radcliff, for the Pacific Coast Borax Company.
10:00	Westinghouse Salute to Radio *November 6, 1929*	In which Frederick G. Rodgers outlines the technical development of radio and Zoel Parenteau and T. J. Vastine direct a string ensemble playing Brahms, Romberg, Kalman.
10:30	Cuckoo Program *January 1, 1930*	In which N. B. C.'s Ambrose J. Weems propounds "Popular Music with Footnotes" and tells his audience just what each popular song really means.
11:00	Slumber Music *February 1, 1927*	In which Ludwig Laurier nightly directs a N. B. C. string ensemble playing numbers from Mozart, Tyler, Keler-Bell. On Sunday evening Mr. Laurier conducts his ensemble under the sponsorship of the Kellogg Company in a program of Kaffee Hag Slumber Music.
12:00	Art Kassell's Orchestra *July 12, 1930*	In which Mr. Kassell broadcasts an hour's dance music from the Metropole Hotel in Chicago at the end of which N. B. C. signs off "until 6:45 tomorrow."

* *Date of first N. B. C. broadcast.*

National Broadcasting Company, Inc.

It is owned by the Radio Corporation. It is the Father of Network Broadcasting. And it does not like to think of its radio child as straying too far from home. It eagerly awaits the development of a "Radio Art."

THE National Broadcasting Company is a corporation in form. It is a broadcasting service in function. Besides, it is a good influence on radio and an excellent advertisement for the Radio Corporation of America, which owns it. It is also a Mecca for nearly everyone who can sing or who thinks he can sing. And it is vociferously devoted to what it calls the "Radio Art." Perhaps this devotion is N. B. C.'s most distinguishing characteristic. They do feel, down at their own building, 711 Fifth Avenue, that they are custodians. Custodians of radio and especially of the public's faith in it. In a ten-year period, radio has become a Third Estate of entertainment. Economically it is much more healthy than the theatre and it is at least as healthy as the cinema. The usual radio owner uses his set for more than two hours a day. And for all the amusement it gives him, he does not pay a cent. Giving pleasure (also instruction) to 13,478,600 families and not charging them for it is a considerable accomplishment. And an accomplishment which N. B. C. regards peculiarly as its own.

For this attitude there is no lack of reason, although it is not shared by the Columbia Broadcasting System or by some 611 U. S. radio stations or by the makers and distributors of recorded broadcasts. Yet it must be remembered that National Broadcasting Company was last month four years old and that in the radio business a four-year-old is grave and reverend. N. B. C. descends from all the fine radio brains of Westinghouse and A. T. & T. and General Electric. Many of its 1,200 employees worked for radio in the days when radio was still a squeal and a whistle. And between the broadcasting of 1926 and the broadcasting of 1930, the difference is chiefly N. B. C.

Courtesy National Broadcasting Co.

AN N. B. C., NOT A ZIEGFELD GIRL

The receptionists at National Broadcasting have been carefully chosen with an eye to their scenic effect.

Courtesy National Broadcasting Co.

N. B. C.'S FIFTH AVENUE ADDRESS

A Mecca for all who think they can sing. But not more than one applicant in 200 qualifies.

• • •

Today, with radio a national institution (about half the world's radios are in the U. S.), radio has become a major industry and broadcasting an important business. In 1929, sales of radio sets and equipment passed the $800,000,000 mark, and there were 1,252,802 hours of air broadcasting, of which about 33 per cent were commercially sponsored. In 1927 advertisers on the two great networks (N. B. C. and Columbia) spent less than $4,000,000. In 1928 they spent $10,000,000. In 1929 they spent $19,000,000. And for the first seven months of 1930 they spent at a rate at which the complete 1930 expenditure would amount to about $25,000,000. It must also be remembered that the money spent with the two networks does not include the money spent individually with the country's 611 radio stations. This amount is estimated to be in the neighborhood of $50,000,000, so that the total air purchases might approximate $75,000,000. Comparing the amount spent over the networks in 1929 with the amount spent in magazine advertising during the same period ($18,728,971 and $203,776,000, respectively), it will be seen that in 1929 radio network advertising amounted to about 9.1 per cent of magazine advertising. And of the money spent with the networks, N. B. C. received approximately 70 per cent. The broadcasting boy has therefore grown older very rapidly, and the experiment of yesterday has rapidly turned into the industry of today.

Yet at N. B. C., radio apparently remains an enthusiasm rather than a business. It is true that N. B. C. sells as many radio hours as possible. It is also true that N. B. C. does not exist solely to provide the public with

[*Continued on page 114*]

International

RADIO'S GOODWILL AMBASSADOR

Not a wireless man, not an entertainment man, Mr. Aylesworth is radio's roving representative.

The Oyster

Considered economically and gastronomically: his travels, his culinary variations, his three great enemies, and his place as greatest underwater crop.

OYSTERS are things to be eaten during the cooler months, and inside of which one's children constantly hope to find pearls which they never discover. This lack, however, does not make of the industry of cultivating and selling oysters an unprofitable venture. It is probably sufficient to say that oysters form one of the more particular (and remunerative) comestibles distributed by the lavishly general General Foods Corp. Oysters until 1924 were the most valuable of American seafoods in annual production. In that year and since they have been overtaken by the salmon, which has been increasing steadily in value. Oyster production, on the other hand, has declined with equal steadiness, from 25,000,000 bushels in 1900 to an estimated 17,500,000 for 1930. But simply because nature has proved itself incapable of producing oysters as fast as man can strip them from the bottom.

Thus it is not overproduction that worries the oysterman. The biggest oyster company has only one salesman, and he makes just one selling trip (of two weeks) a year. At one time Chesapeake Bay, the world's greatest oyster producing ground, yielded 30,000,000 bushels of oysters a year. Today it averages 5,000,000. How to increase, not how to limit or even how to distribute, production is the question which every oysterman ponders.

Oyster fanciers may not think this a very interesting question. When one surveys a half dozen Blue Points in the half shell, one does not ponder on the problems that confront the oyster industry. Nor does one think of the huge mound of 7,000,000 bushels of oyster shells towering on the shores of the Damariscotta River in Maine, a monument not only to many an Indian tribal feast but also to the waning fertility of American oyster beds. Instead one reaches for the horse-radish. There are certain points about the oyster, however, that may well interest the epicure even in the act of reaching. To tell him at that juncture that an oyster passes three quarts of water through its system every hour would perhaps annoy him. To add that an oyster colony the size of the White House grounds uses ten times as much water per day as the entire population of the District of Columbia—this would probably infuriate him and would certainly distract him. But there are certain strictly gastronomic quiddities about the oyster of which by no means every epicure is aware and to which each should hearken with interest:

In the first place, oyster fanciers can plan on eating more oysters on the half shell in 1935 than they have in the past twenty years. For this fall's "set," or development of oysters spawned last spring, in the North Atlantic beds (whence come almost all oysters consumed on half shell) is the most abundant in two decades.

Fanciers will have to wait till 1935 because an oyster takes four or five years (in southern waters two) to mature. Even after it passes the five-year mark, its meat remains tender, though its shell grows thick and gnarled. At least one lot of fifteen-year-old oysters has been sent to market.

All Atlantic Coast oysters belong to the same species: Ostrea virginica. Greatest line of distinction is between northern (Cape Cod, Long Island Sound, New Jersey) and southern (Chesapeake Bay and Gulf of Mexico) oysters. The colder waters of the North plus more extensive "farming" of the beds make northern oysters firmer-fleshed, more perfect. Hence they are largely eaten on the half shell while southern oysters are mostly "shucked" out of their shells and sold for cooking. Also, the northern oyster has more of a salt tang about it than have those of the South.

Whether an oyster is a Blue Point or not depends on where it ends its days, not where it begins them. Though an oyster does not move, it often travels hundreds and thousands of miles. Oyster farmers set their crop in one place, mature it in another, and often fatten it in a third. Thus a Blue Point may have been born off Rhode Island and reared in Connecticut before it ends up on Long Island.

The New York State statutes define a Blue Point oyster as one that has been in Great South Bay, Long Island, for not less than sixty days immediately preceding its being offered for sale. Falsely to call oysters "Blue Points" is a misdemeanor.

Cape Cods are larger than Blue Points merely because they are left to grow a year or two longer.

Contrary to popular belief, oysters are edible all year round. They are not palatable in summer months because they are either full of spawn (whence a flat taste) or they have recently spawned (whence thinness and stringiness).

On the Pacific Coast the chief indigenous oyster is the Ostrea lurida, which is found in limited areas of Puget Sound. Though only about the size of a half dollar and rather coppery in taste, its rarity makes it an expensive delicacy.

Pacific coastal waters are too cold to allow oysters to spawn, whence the scanty production. Carloads of Atlantic Coast oysters are shipped out to the Pacific, however, and there planted to grow fat again after their trip across the continent.

Longest wandering of all, however, is the trip many an Atlantic oyster takes to England. Though there are plenty of British oysters, there is logic behind this voyage. The British coastal waters are so chill that American oysters will not spawn there. Hence, planted at Brighton and other watering places, they remain palatable to vacationists all summer long.

When oysters are green, finicky but ignorant diners send them back to the kitchen. This is a major error: the green tinge indicates the presence of copper, which is of the greatest value to the human system.

© International

ENGLISHMEN TAKE THEIR OYSTERS SERIOUSLY

Colchester opens the oyster season in style, with the Lord Mayor, the Town Clerk, and the Town Sergeant solemnly gulping down the first catch. Many an American oyster crosses the Atlantic to end its days in British waters.

Hunters and farmers

There are Blue Points, Cape Cods, Lynnhavens, Cotuits. There are also wild oysters and domesticated oysters. In the early days of the industry all oysters were wild, growing in natural beds to be gathered by the first comer. Those were the times of

the old-style oysterman, one of the most calmly piratical ruffians that ever exploited the country's natural resources. In the closing decades of the last century he flourished, stripping the oyster beds all along the Atlantic Coast. The fabulously prolific beds of Chesapeake Bay were almost wholly destroyed in twenty years by the 800 or 900 dredge boats of the oyster fleet. Despite Maryland's famed "oyster navy," consisting of two big steamboats equipped with twelve-pound howitzers, the stripping went on until the rocks were practically bare of oysters. In 1888 Maryland alone produced 15,000,000 bushels of oysters, which is within 3,000,000 of the entire U. S. production today. Whether or not the depleted beds will regain their old fertility depends on whether oystermen can change their viewpoint from that of hunters to that of farmers. The transition will by no means be easy. Independent fishermen, or "freebaiters," still dredge up oysters by hand from the steadily dwindling oyster beds, while the larger companies operate their farms on land leased from the state. Invariably there is conflict since the freebaiters insist upon taking oysters wherever they find them. In Chesapeake Bay and southern grounds, where farming is still something of an innovation, rifles even have been brought into play. Which is another fact that might well distress an epicure.

Although most of the 65,000 people in the industry still regard the oyster as prey, the minority who look on the oyster as a crop is already accounting for over half the annual production. Biggest oyster farmer, in fact biggest unit in the entire industry, is Bluepoints Co., Inc., a subsidiary of General Foods Corp. Bluepoints Co., Inc. owns 36,000 acres of New England and Long Island farmland, all of it under water. It cultivates this land with dredges and mops—the latter being dragged over the bottom to entangle the spiny starfish, arch-enemy of the oyster. The dredges, which are steam-powered, come into play whenever the oyster is to be raised from his undersea home. Bluepoints Co., Inc., like all the other farmers, disturbs its oysters continually. After being set out on one ground, they are dredged up and transported to another to grow, whence they are dredged up once again and taken to fattening grounds abounding in the microscopic diatoms on which the oyster feeds. Since the oyster farmer cannot see his crop, he must constantly dredge up samples of it to see how it is getting along. All of which makes the life of an oyster under cultivation an uneasy one.

© Keystone

SALT WITH OYSTERS

Farming under water is easily as complex and delicate a craft as dry land farming. The crux of the whole process is the set. In the summer the female oyster exudes from 10,000,000 to 60,000,000 microscopic eggs into the water; the male contributes a smaller but vital quantity of sperm. Eggs and sperm come together in the water, form larvæ which float about or lie on the bottom for two weeks. They then attach themselves to some clean hard surface which the farmer has thoughtfully provided. For which purpose old oyster shells, shoveled overboard at the rate of 500 bushels and up per acre, are the most widely used materials. In a few months the set has developed far enough for the farmer to be able to get a fairly accurate idea of what sort of crop he may expect four or five years from then. As in land farming, the weather is the main factor in the oyster crop. Last summer's exceptionally warm and dry weather produced the best set in twenty years on many New England and Long Island oyster grounds. The time the raiser of corn devotes to weeding, the oysterman must spend in mopping up starfish from his grounds. Against two other great enemies of the oyster, he can do little.

Ewing Galloway

Ewing Galloway

BLUEPOINTS CO., GENERAL FOODS SUBSIDIARY AND LARGEST OYSTER COMPANY, IS BOTH SCIENTIST AND FARMER

A dredge filled with oysters comes over the side from the underwater farmlands near Greenport, Long Island (left). At the right is the laboratory at West Sayville, Long Island, whose great jars contain myriads of swimming larvæ. The egg-box affair held by the man on the left is a lime-treated crate to which larvæ attach themselves. After the set, the crate efficiently disintegrates. This is a scientific substitute for the oyster shells illustrated on the following page.

Ewing Galloway

PILES OF OYSTER SHELLS LIKE THESE ARE BY NO MEANS A WASTE PRODUCT. THEY ARE SHOVELED BACK ONTO THE BEDS TO SERVE AS ANCHORAGE FOR A NEW GENERATION OF OYSTERS

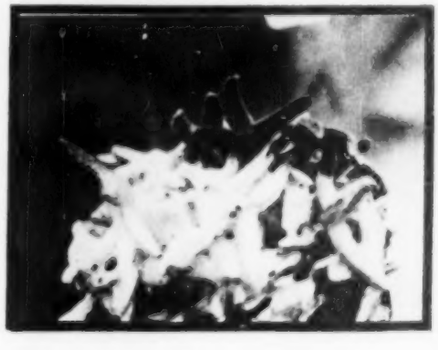
One is the drill, a small periwinkle that makes a neat round hole in the oyster shell and sucks out the meat. The other and most spectacular is the drumfish, which appears in schools on southern oyster grounds and crunches up the oysters, shell and all, in its bony jaws. To a landsman the most difficult part of the oyster farmer's trade is finding the farm. What appears to be a few poles sticking out of the water here and there is to the experienced eye of the oysterman a farm as clearly marked and fully as familiar as the most circumscribed of potato patches.

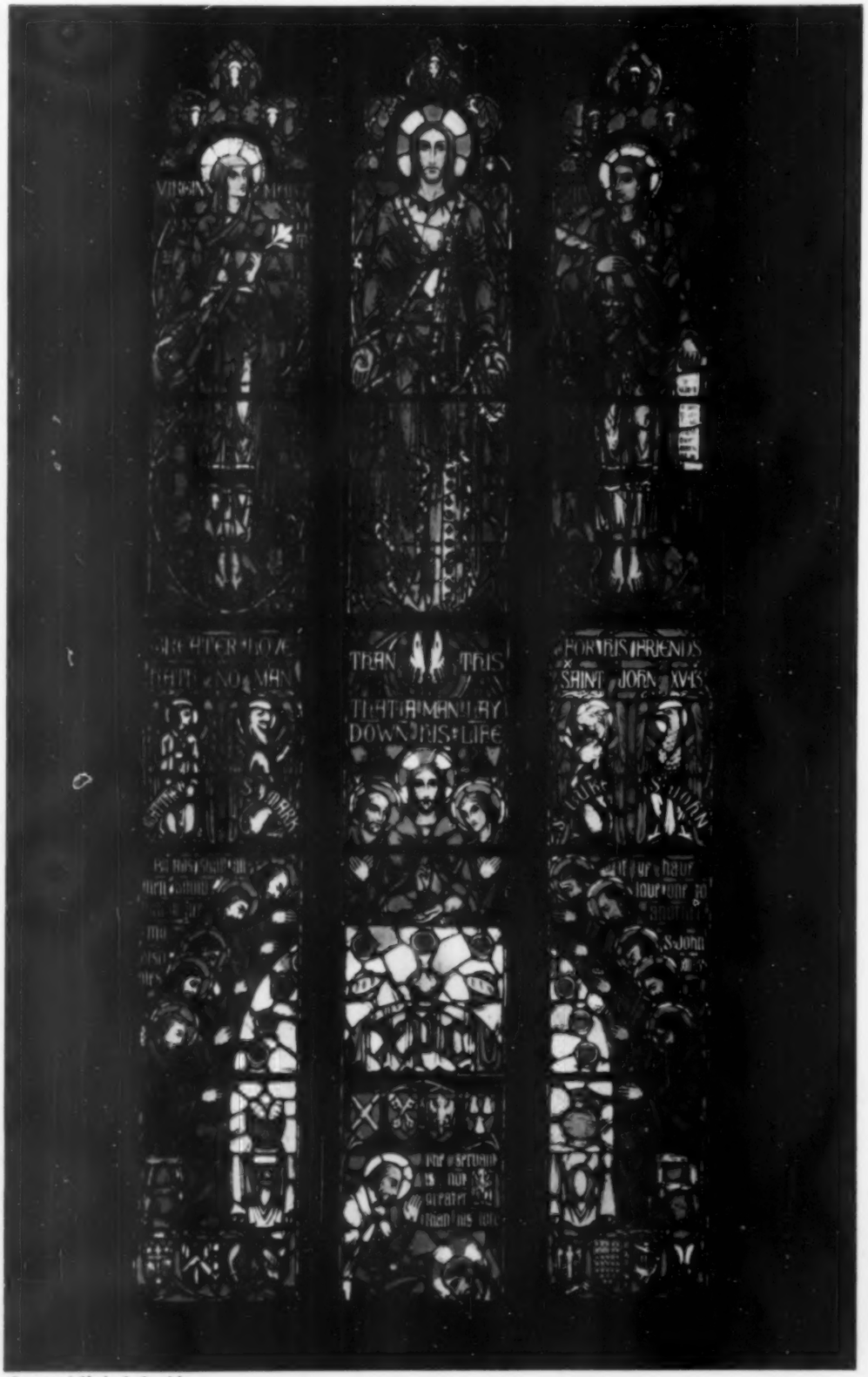
The scale on which the oyster industry now operates may be gauged from the fact that largest Bluepoints Co., Inc. only accounts for 5 per cent of total production. There are other good-sized companies, notably Andrew Radel, of Norwalk, Connecticut, which is second largest. Against such farmers as these, the independent hunter is still making his futile and doomed stand. But it is obvious that the industry's only prosperous future is in cultivation, or, it may be, in something more advanced. A year ago, Bluepoints Co., Inc. served at a banquet some oysters which its scientists had artificially propagated in its laboratory. Perhaps at some distant date the laboratory may succeed the farm even as today the cultivator succeeds the hunter. Oysters may some day grow in Kansas City laboratories. But for the present, at any rate, it is by establishing more and more farms that the industry will show that it has not neglected to garner from experience its few pearls of wisdom.

Fortune—Macdonald

AN OYSTER FARMER AND THE WEEDS THAT GROW ON HIS FARM

Captain Jim Seymour, who runs General Foods' 1,000-acre oyster farm at Northport, Long Island, has been cultivating Northport oysters since 1886. He can open an oyster as dextrously as any chef, can tell at a glance whether it is too green, too thin, or too watery. Like every oyster farmer, Captain Jim has one main chore: weeding starfish. Yarn mops are dragged over the beds, entangling the "sea stars." Since each of a sea star's five points can grow four others on occasion, scalding with live steam is the only sure method of ending this pirate's destructive career. To the right, some well-steamed starfish.





Courtesy of Charles J. Connick

THE LAST SUPPER, A PORTION OF CHARLES J. CONNICK'S GREAT EAST WINDOW IN THE CHANCEL OF PRINCETON UNIVERSITY CHAPEL

Modern Stained Glass

Is responsible for an American Sainte Chapelle at Valley Forge. The Last Supper, according to Mr. Connick; Mr. Bonawit's conceits; and other brittle achievements. Their sum total is a considerable industry and a notable American art.

THERE would be little excuse for writing about modern stained glass if it did not compare with the glass of other centuries. Yet it is a prevailing superstition that the medieval art of stained glass was lost shortly after the guildsmen removed their scaffolds from Chartres Cathedral. This is not so. Better would it be to say that the art was misplaced. For if the 17th and 18th centuries preferred pallid, pictorial glasswork to the trembling, radiant symbolism of the Dark Ages, that was a matter of taste and not technique. And if the 19th century conceived of stained glass merely as translucent painting, that was not due to the loss of any ancient and superior formula. The landed Mid-Victorian who installed an insipid glass likeness of Lancelot in the parlor, between his collection of conch shells and his signed photograph of President Garfield, was acting according to the accepted esthetic tenets of his time. All of which is by way of saying that stained glass is as much a matter of attitude as of method and that the scarcity of medieval-type stained glass in modern times is due not so much to the ignorance of medieval chemistry as to the absence of the medieval appreciation of dynamic, splendid color.

Today, however, the U. S. contains several glass craftsmen whose outlook and procedure are inspired by the early centuries, whose results are very definitely comparable to the wonders of Chartres and Sainte Chapelle. Furthermore, the finest efflorescence of this Old World art is currently to be observed in the New World. In the light of this country's riches, this does not seem in the least paradoxical. It takes money to make good glass and money to buy it. American money is doing both, but the steadily growing quantity of good glass in this country has as yet little general appreciation. Partly this is due to the public's lack of information as to the criteria by which glass is judged.

In general, there are three ways in which a stained glass window may be produced. In recent centuries, as we have already hinted, the usual practice has been to paint a design on glass, subsequently fusing the paint into the surface. In this way some very pretty pictures have been produced. Sir Joshua Reynolds depicted a quartet of dainty maidens in New College, Oxford, which may be regarded by medievalists as a vitreous atrocity, but which undoubtedly caused the elegant artist to puff out his sateened chest.

In America the opalescent glass school, using a semi-opaque glass of marble-like texture, arose in the seventies when John La Farge tried to reproduce the effect of sunlight through a wet soap dish. The most famous opalescent windows are Mr. La Farge's own, such as those at Harvard and Trinity Church, Boston. The movement was furthered by Louis Tiffany and a host of less gifted men. The vapid, sentimental glass work of the latter may be found in churches all over the country; we shall devote no more time to it here.

What makes the medievalist shudder when he considers the glass-painting and opalescent methods is the simple fact that they neglect the peculiar value which sets glass apart from any other medium. That value is color. It is the color possibilities of stained glass which have excited the rhapsodies of Gothicists from Viollet-le-Duc to Henry Adams. It is the color possibilities of stained glass which make it possible for Oswald Spengler to liken the interiors of the great Gothic cathedrals to lonely, twilit forests. And it is the color possibilities of stained glass which have been misplaced for several centuries.

The opalescent method precludes realizing the full color value of stained glass just as effectually as a coat of whitewash would conceal the sumptuous texture of velvet. A painted design fused into the surface of glass is practically colorless compared with the medieval tonality. The only way to get the medieval tones is by the medieval method—the use of clear full-colored glass—glass in which the color is not fused into the surface but permeates the entire substance. The result is a manifold brilliancy—smouldering or cool, concentrated or diffuse. What it may mean to a sensitive witness is perhaps best suggested in Proust's celebrated description of the church at Combray: "There was one among them which was a tall panel composed of a hundred little rectangular windows, of blue principally, like a great game of patience of the kind planned to beguile King Charles VI; but, either because a ray of sunlight had gleamed through it or because my own shifting vision had drawn across the window, whose colors died away and were rekindled by turns, a rare and transient fire—the next instant it had taken on all the iridescence of a peacock's tail, then

VALLEY FORGE

Nicola D'Ascenzo's George Washington panel in the Memorial Chapel, which has been called the American Sainte Chapelle.

shook and wavered in a flaming and fantastic shower, distilled and dropping from the groin of the dark and rocky vault down the moist walls . . . a moment later the little lozenge windows had put on the deep transparence, the unbreakable hardness of sapphires clustered on some enormous breastplate . . ." It is this shining filtration of light, varying with every change of weather or the position of the onlooker, which makes it impossible to represent stained glass in reproduction. It is no exaggeration to say that the pictures on these pages do less justice to their originals than would reproductions of any other plastic art.

A renewed appreciation of color, then, is chiefly responsible for the recent revival of the medieval method after years of a watery, lantern-slide species of glass work. And let it be emphasized here that such experts as Nicola D'Ascenzo of Philadelphia and Charles J. Connick of Boston are able to fashion full-color glass windows in the manner of the Middle Ages.

The second great factor in the medieval method is design, which is regarded, in essence, to be the pleasant disposition of color. The medieval glass-worker, instead of painting pictures on glass, built up his pictures, in the mosaic manner, out of innumerable small pieces of full-colored glass. He was thus prevented from being as fluid and pictorial as his glass-painting successors, but if the exigencies of his method caused his work to be relatively rude, it is no less true that this rudeness possessed a decorative vigor, a luminous pungency, which his descendants, with all their paint pots and frothy fantasies, could never obtain. To the medievally-minded glass-worker, there can be but one choice between the effete Virgins of painted glass and the incandescent, jewel-like figures of the full-color period. Because his process prevented him from too intricate figure work, the medievalist dealt extensively in the simpler language of symbolism. Particularly in the so-called "grisaille" glass did the design frequently omit figures altogether, relying on patterns, vegetable and geometric.

Obviously the medieval and subsequent methods can be combined. Indeed, a certain amount of painting (details of faces, etc.) is to be found in medieval glass, particularly that which is meant to be viewed at close range where the painted colors will register with the full-color glass. And even the most inveterate glass-painters and opalescent craftsmen frequently employed full-color glass for background tones. But this partial intermixture of methods need not confuse anyone. In general, the divergence between the styles is absolute, immediately apparent.

Consider now some of the difficulties which confront the glass craftsman. First there are the creative problems of color and design, as weighty and intangible as in oil painting. Affecting these is the fact that glass colors are juxtaposed in their full intensity with no possibility of mixing and toning such as the painter in pigments always enjoys. But the popular conception that a glass-worker's palette is limited is not true. Violets, the last colors to be made available, were obtained in the 16th century. The predominance of blue in early glass, to say nothing of its spatial, ethereal suggestions, was due to its wonderful power of radiation. Modern glass men recognize this, as well as blue's virtue in the balancing of other colors. Then, too, the craftsman must consider position, the way in which light will strike his window at each hour of the day. Subtle is the partnership between glass, sun, and sky. Again we quote Proust, in a curious statement which any stained glass student will immediately recognize as valid: "Its windows were never so brilliant as on days when the sun scarcely shone, so that if it was dull outside you might be certain of fine weather in church." It is literally true that the color of the skies differs between Paris, for instance, and New York, and the sky's blue, or lack of it, profoundly affects the tonality of stained glass. In France, glass must be designed to look best on the gray

Photos Courtesy of Charles J. Connick

THE CUTTING ROOM

The glass-cutter is guided by a cartoon of the window—an actual-sized, detailed drawing which is cut up to indicate the exact shape of the individual pieces.

THE ASSEMBLY ROOM

In a vasty studio the window is assembled for study. The glass is tied together with grooved strips of lead and reinforced with a pattern of iron rods.

R. C. Rose

ABOVE—THE PRINCETON CHAPEL. BELOW—RALPH ADAMS CRAM

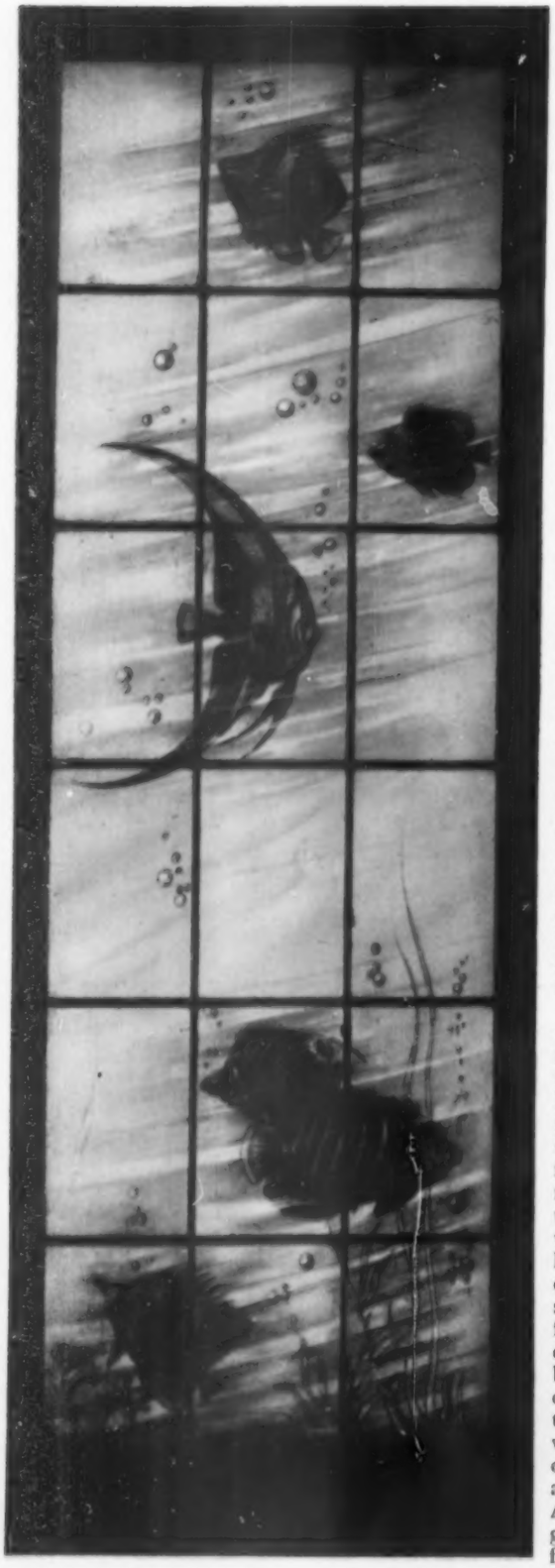
BELLIGERENT GOTHICIST, PATRON OF GLASS—CRAM

IN SOME of its most glorious manifestations, Gothic architecture seems to be primarily a frame and setting for stained glass. Obviously, the Gothic style is a great deal more than that, but it remains true that the Gothic and its glass are inseparable. Thus it is quite natural to find that one of the greatest benefactors of American glass craftsmen is the leading Gothic architect of the U. S., Ralph Adams Cram of Boston, a native of New Hampshire, now in his sixty-eighth year.

Before the War the names of three great partnerships dominated any discussion of American architecture—McKim, Mead & White; Carrere & Hastings; and Cram, Goodhue & Ferguson. The first two firms were noted for a conscientious, brilliant Classicism, the last for its devotion to the Gothic. Of the eight men represented in the names of these firms, Mr. Cram alone survives. The American architectural scene is changing; the age of steel and reinforced concrete has bred new styles, and new names have arisen as their exponents—Raymond Hood, Holabird & Root, Arthur L. Harmon, Ely Jacques Kahn, Ralph Walker.

In this time of experiment and the excited formulation of new doctrines, Mr. Cram remains the patient, scholarly Gothicist. He does so by conviction, not that of the bloodless pedant, but that of the intense, almost belligerent zealot. Essentially, Mr. Cram's architecture may be accounted for by the fact that he is a Christian. He believes in the past, present, and future of Christianity and the great Christian architecture. A happy corollary for the crafts is his enthusiastic search for the best in stone, metal, wood, and glass work. And since the designers of medieval-type glass, more than any other craftsmen, have dealt in an unfamiliar art, they have been particularly benefited by Mr. Cram's weighty patronage.

Keystone



FISH

In a Manhattan residence may be observed an aquarium in glass, the work of G. Owen Bonawit, who specializes in secular subjects.

days, which there predominate; American glass must be attuned to brilliant sunlight, yet also adjusted to overcast skies. Mr. D'Ascenzo's clerestory window in St. Thomas's was designed so that when a neighboring skyscraper eventually cuts off much of its light, the tints will be enrichened.

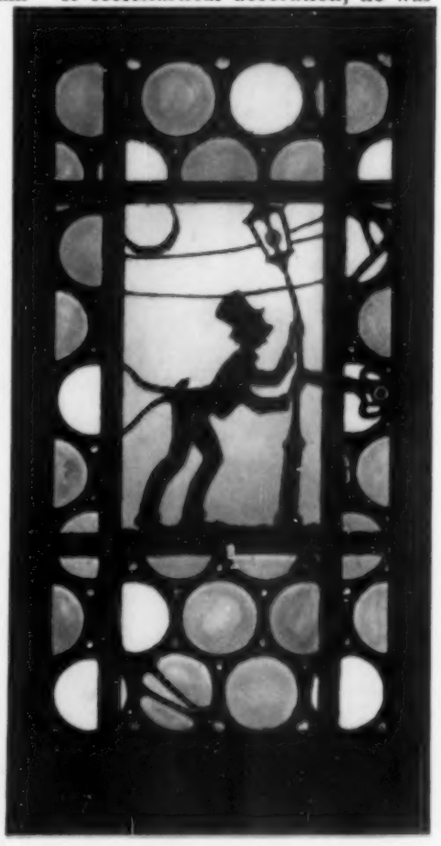
Position also affects the design. A window may be sixty feet above or away from the point of observation, in which case its figures must be rendered in suitably large scale. On the other hand, a window viewed from a distance of three feet suffers from coarseness of treatment. There are numerous tricks of glass to be studied; some colors spread, others contract. For this reason, it is often necessary to distort the drawing of a window if it is to seem natural at a distance, and the same design would have to be altered in drawing if the color scheme were to be transferred. All these and many other allied effects must be visualized by the craftsman before his window is put in place, for it is only rarely that reworking is financially feasible. As for the observer, it is necessary to remember that the full beauty of stained glass is no more apparent at the first glance than is the full significance of any teeming subject. Experts estimate that, from a purely optical viewpoint, the eye requires from half to three-quarters of an hour to adjust to a stained glass window. Certainly if the sleepy Princetonians, attending morning chapel, were to fix their eyes on Mr. Connick's Great East Window, they would see a great deal more at the end of the service than they had at the beginning.

Throughout this discussion we must repeatedly mention the two men who are generally conceded to be the leaders of their craft. Nicola D'Ascenzo of Philadelphia is a quiet, businesslike, and tactful descendant of an Italian family of armorers. Among his many gifts is an uncanny ability to convince opinionated churchwomen that the magenta they had so much fancied in the church around the corner is unsuited to their own needs. Professionally, perhaps, his greatest distinction is his honorary membership in the American Institute of Architects, the highest architectural body in the country, whose roster represents the pick of the profession. His election was a tribute to his contributions to American art through stained glass. This honor has been conferred on only one other glass craftsman—Mr. Connick. Mr. D'Ascenzo is, however, the only glass man who has won the Native Industrial Art Medal of the Architectural League of New York (for a 13th century window in St. James's Episcopal Church of Bristol, Pennsylvania).

He avoids the slavish imitation of medieval windows, but when he was asked to repair a 12th century roundel for the Philadelphia Museum, he made a copy so exact that the director found great difficulty in telling it from the original. The museum subsequently appointed D'Ascenzo curator of stained glass. He has also been a regular lecturer at the Metropolitan Museum of Art.

He was the first man in America to make full-color windows of the 13th century type. Noted as a colorist, he excels in tying his windows into the architectural fabric by means of sympathetic color and design. The theory that stained glass should be a lustrous adjunct of architecture and not an independent entity is shared by all the best glass-workers.

Born in Torricella, D'Ascenzo came to Philadelphia at the age of eight. He abandoned portrait painting professionally because he was bothered by the caprices of his clients. In the practice of ecclesiastical decoration, he was



SOUSE

A Bonawit vignette from the residence of Sam Katz, theatrical magnate, in Centenary, New York.

annoyed by changes which light from other men's windows wrought in his murals. This impelled him to undertake glass work. In the beginning, he was naturally compelled to do the type of work he did not advocate. He is now financially independent and famous enough to do as he likes, even to work without profit, as was the case at Valley Forge. A great admirer of 13-15th century work, he nonetheless defies the strict archæological attitude which would force him to make bloodless, anæmic saints. D'Ascenzo saints unfailingly suggest that health accompanies piety. He has invented a glass in which the design is raised as well as colored, admitting almost full daylight but concealing any such public eyesore as a Tom Thumb golf course. Since stained glass usually appears gray and monotonous when the church is lighted from within, he has executed windows which reveal a pattern of gilded leads and subdued color under direct interior lighting. This pattern is quite different than the appearance of the window in transmitted daylight and is far more satisfying than the common stunt of artificial lighting behind the glass.

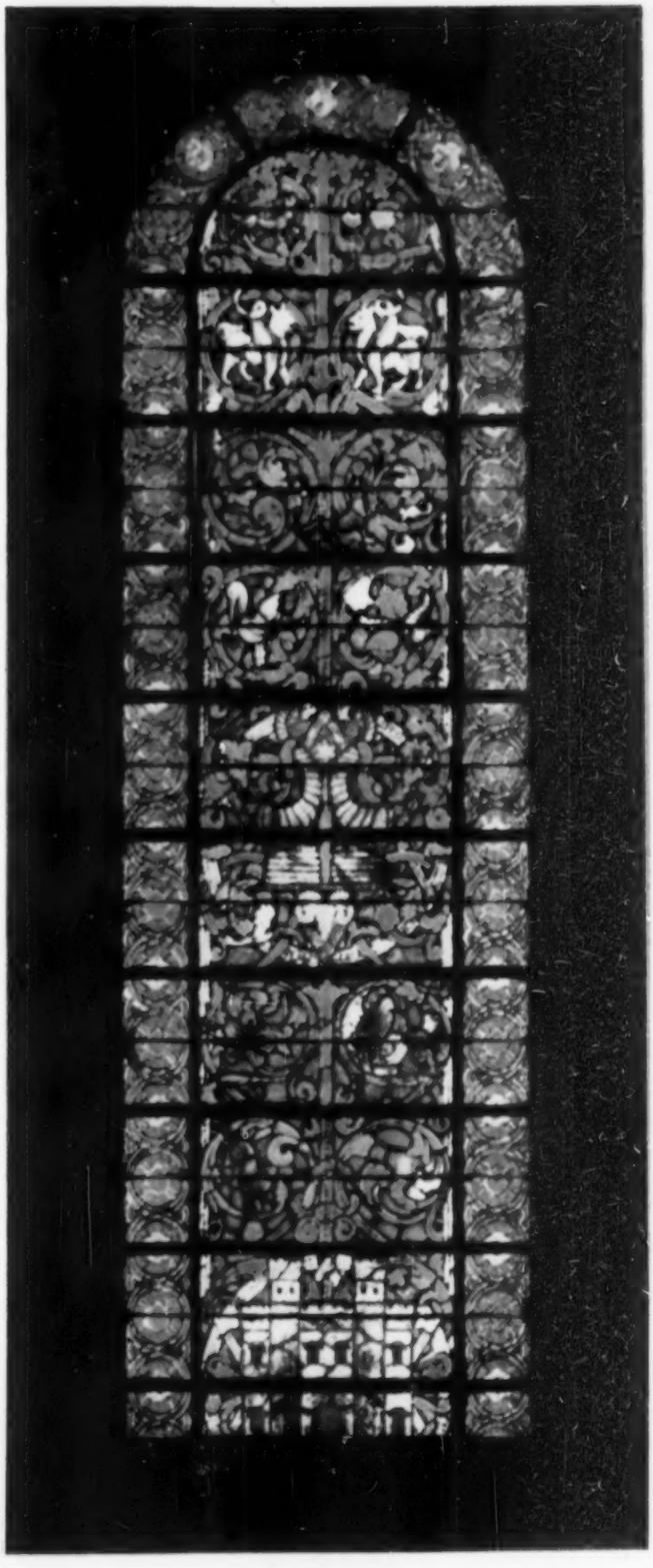
The D'Ascenzo studio is run on a profit-sharing basis; the craftsmen, among whom is Nicola D'Ascenzo Jr., bring their banjos, mandolins, and violins to the studio for impromptu concerts at noon and at the end of the day. The boss is one of the best fiddlers of the lot. He is also an adept etcher and paints in water color and oils at his summer home at Folly Cove Point, Massachusetts. For some time D'Ascenzo Jr. has been occupied with the problem of fusing gold into glass, a process long known only to German craftsmen. Having perfected it, he recently designed a golden glass mosaic for Mrs. Cyrus H. K. Curtis. It may be seen in the Unitarian Church of Germantown, Pennsylvania, as part of a decorative scheme including a chancel window by D'Ascenzo Sr., donated by Mrs. Curtis in memory of her daughter, Eleanor Pillsbury Pennell.

Because Mr. D'Ascenzo's studio is located in Philadelphia, the environs of that city form a notable hunting ground for stained glass. A sumptuous rose window by Mr. D'Ascenzo may be seen in the Church of the Holy Child and several fine secular pieces in the Fidelity Trust Company. Another secular achievement of which both the management and the craftsman are proud is Mr. D'Ascenzo's floral glass for various Horn & Hardart automats throughout Philadelphia. Perhaps the finest D'Ascenzos of all, however, may be found in the Memorial Chapel at Valley Forge—the magnificent historical medallions, red for Martha Washington, blue for George. Due largely to these extraordinary productions, this national shrine has been called the American Sainte Chapelle: not even a raucous schoolgirl who sometimes guides visitors around the chapel can detract from Mr. D'Ascenzo's achievement. No student of stained glass should neglect the few examples of his work to be found in New York. St. Thomas's Church, one of the most admired architectural works of the late Bertram G. Goodhue, contains one brilliantly imperious piece of glasswork by Nicola D'Ascenzo: a clerestory window. His glass in the chapel of the new Riverside Church (Rockefeller and Fosdick) is also of the first order.

Mr. Connick of Boston

Charles J. Connick of Boston has been developing the traditions of medieval glass for thirty years. The influential Ralph Adams Cram was among the first to appreciate his talent. Born in Springboro, Pennsylvania, fifty-five years ago, Mr. Connick left Pittsburgh High School to draw for a local newspaper. The chalk plate engraving system then used required a technique not unlike etching, which emphasized for young Connick the necessity for expressive line—an invaluable aid in stained glass work. He studied glass and took art courses in Pittsburgh, visited the great European churches, and opened his present studio in 1913. He is the only glass man to hold the American Institute of Architects Craftsmanship Medal.

A tireless lecturer and author, Mr. Connick is noted for the symbolical rather than realistic treatment of his subjects. His "Doughboy," for instance, is not a literal depiction of a member of the A. E. F., but a stylized design in color based upon the doughboy theme. He believes the modern school of painting—Matisse, Picasso, and Braque—in educating the public to appreciate symbolism, should greatly advantage the glass-worker. When asked to copy the clerestory windows of Chartres for the Riverside Church, he



TEMPLE EMANU-EL

New York's new synagogue contains a symposium of glass which, in accordance with Mosaic law, is devoid of living figures. Above, a D'Ascenzo window.

absolutely refused and requested to be allowed to submit a sample of new work in the old manner. This he did, offering a section six feet square with instructions that it be examined at a distance of seventy feet. These instructions were ignored; the intended effect was naturally not appreciable at close hand, and Mr. Connick's services were not engaged. Now permanently installed at the top of a long staircase in the Chicago Art Institute, the rejected Connick sample offers those who pass up or down a fine lesson in the changes which glass reveals in "performance." French importations were used for the Riverside Church with results which many experts consider lurid and illegible. Presumably the French glass men did not comprehend the brilliancy of American atmospheric conditions.

A Connick gallery

New York, which contains so surprisingly few pieces of fine glass, has an excellent example by Mr. Connick, the one outstanding window in the enormous, incomplete Cathedral of St. John the Divine. It stands in the chancel of the little Chapel of St. Martin of Tours and far outshines the larger, more elaborate windows in the cathedral proper. A further instance of his art may be seen in St. Agatha's church in Philadelphia, and for conclusive evidence of his craftsmanship the student should seek Princeton University, which has in its chapel not only an exquisite piece of Gothic architecture from the drafting boards of Ralph Adams Cram, but also the finest symposium of glass in any American university. At opposite ends of this lacy edifice are two great windows, Mr. Connick's to the east, Mr. D'Ascenzo's to the west, both in the grand scale and the grand style. Eventually Mr. Connick will also be represented by four epic windows, symbolizing the *Divine Comedy*, the *Morte d'Arthur*, *Pilgrim's Progress*, and *Paradise Lost*.

Austerity may be the most frequent mood for stained glass, but it is by no means the only one. Nor is it necessary to have the ecclesiastical subject and the antique temper. G. Owen Bonawit, a New Yorker in his early thirties, deals in modern manners and subjects and avoids church contracts as he would the deadly tarantula. Specializing in graceful conceits rendered in light color (no color at all to one of Mr. D'Ascenzo's or Mr. Connick's viewpoint), his golden fish and parrots illumine the house of the late Edward Bok at Lake Wales, Florida. He has designed a veritable nautical museum in glass for the Cunard Building in New York. The great Sterling Library and Harkness Quadrangle at Yale are full of his scholarly and collegiate vignettes, and Sam Katz, theatrical *entrepreneur* (Paramount Publix Corp.) had Mr. Bonawit execute a glass souse for the door of the Katz private bar at Centenary, New York. Mr. Bonawit has never been to Europe, but he scours American paleontology and archæology for subjects. His interest in stained glass was first aroused by his uncle, the late Owen Bowen of Heinigke & Bowen, stained glass makers (now Heinigke & Smith). Other stained glass makers who incline more and more to the medieval style are Wilbur Herbert Burnham of Boston, Reynolds, Francis & Rohnstock of Boston, and Oliver Smith, of Bryn Athyn, Pennsylvania.

Cartoon and kiln

The mechanical-chemical processes whereby a stained glass window is made are substantially the same today as they were in the Middle Ages, although gas and electric kilns and soldering irons have replaced the old charcoal fires, and the craftsman may buy ready-made leads in various shapes and sizes instead of moulding them himself. As ever, the procedure is a matter for a master craftsman and skillful assistants; there should be no suggestion of factory methods. When the client and architect have approved scale sketches in water color, a cartoon is prepared. This is a line drawing the actual size of the proposed window. It indicates the exact shapes and sizes of the individual pieces of glass and assigns a number to each of them. A similar cartoon is cut up like a picture puzzle, the resulting pieces of paper being attached with beeswax to a plate glass easel with spaces left for the leading.

A glazier then removes the pieces of paper one by one, selects glass of the color indicated by the color sketch, cuts it according to the paper shape, and affixes it with beeswax in its proper place on the glass easel. Diamond-edged cutting instruments are a 15th century invention; they obtain a smoothness, a nicety of outline which the earlier method of scoring with red-hot irons and breaking along the scoring lines did not permit. Thus the date of disputed glass may sometimes be determined by an examination of the glass edges.

Painting, leading

When the glass has been cut and the colors approved, such painting as seems desirable is begun. Flesh tints, drapery details, decorative patterns, and whatnot are painted with a pigment consisting of a powdered glass flux mixed with metallic oxides and sulphides of iron, magnesium, cobalt, or copper to supply the opaque coloring matter. When more light is desired through a given spot, the paint may be stippled or wiped out. The painted glass is laid on trays covered with plaster of Paris and heated to "a bright cherry red," in the stained glass jargon, or 1150 to 1250 degrees Fahrenheit. The pigment is fused into the glass and becomes part of it as the melting point of the flux is at least 500 degrees lower than that of the glass on which it is used. Slow heating and cooling are important, otherwise the glass

NICOLA D'ASCENZO

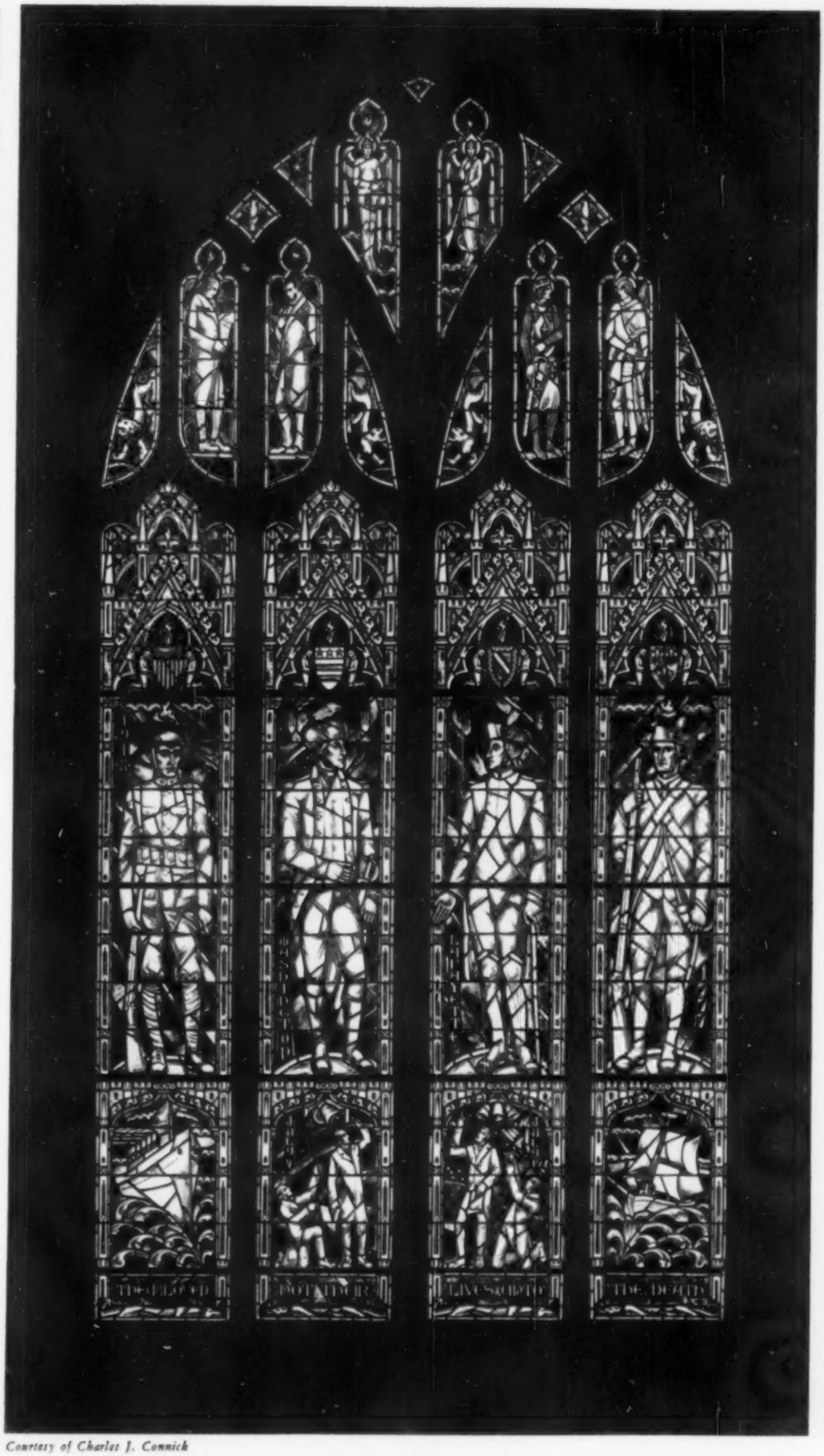
Master craftsman of Philadelphia, medalist of the Architectural League. In his Memorial Chapel windows, George Washington still winters at Valley Forge.

G. OWEN BONAWIT

New York's specialist in the secular moods of glass, historical, zoological, facetious. He has never visited Europe; his sources and subjects are American.

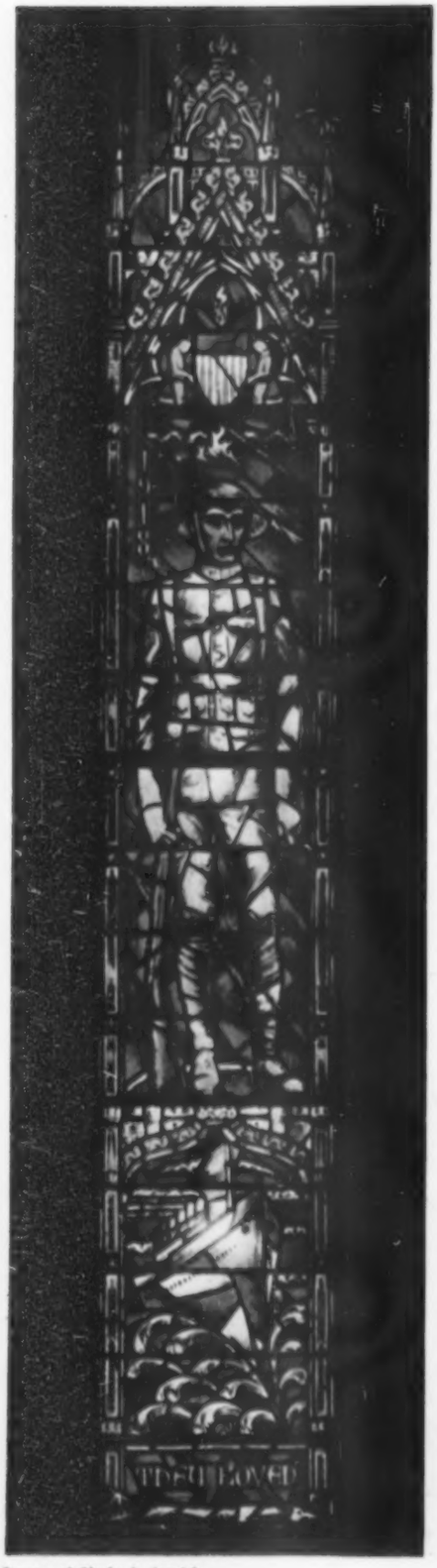
CHARLES J. CONNICK

Leader of the Boston school, veteran of a thirty years' war to reëstablish the medieval type of stained glass, originator of the striking "Connick blue."



Courtesy of Charles J. Connick

MR. CONNICK'S WINDOW COMMEMORATING THE AMERICAN EXPEDITIONARY FORCES IN THE AMERICAN CHURCH AT PARIS



Courtesy of Charles J. Connick

DOUGHBOY

A detail from Mr. Connick's A. E. F. window, which appears on the preceding page.

becomes extremely brittle and would be likely to crack under wind pressure. The modern craftsman may fire and refire the back of his glass with a pigment until the surface imperfections have absorbed the color, and the patine deposited by centuries of dust and wind and rain has been simulated. The individual pieces of glass are then leaded together, cemented to prevent leakage, and the whole fabric braced with a decorative pattern of iron rods as a precaution against the pressures of the weather. Then occurs the testing of the window in light, an exciting process for the craftsman. Seeing his entire work sun-smitten for the first time, he can "tune" and balance his colors, making such final changes as he deems necessary.

There are some 400 stained glass studios in the U. S. Last year they produced $3,000,000 worth of work as against $500,000 worth of importations. The best American glass is generally believed to surpass the best that Europe can offer. This opinion was echoed by Bishop William T. Manning, after a recent tour of Europe, when he announced that the glass for the Cathedral of St. John the Divine, hitherto largely English, would hereafter be made in America. The comparison between the garish English glass in the apse and Mr. Connick's windows in the Chapel of St. Martin of Tours is so obvious as to need no comment. And yet the English are our chief competitors in high-quality glass. The French trend is too modernistic to lend itself to ecclesiastical purposes, which absorb most of our stained glass, and Germany's distinctive contribution apart from more modernism, is cheap glass, especially in stock colors and designs, which may be observed in many American memorials to the dead of the World War.

Glass value

Manifestly, it is just as difficult to generalize about stained glass values as about those of painting or sculpture. Sometimes in the case of great areas it is convenient to fix prices on a footage basis. In this case, the best American glass commands $45 to $75 per square foot. But it is a more frequent procedure for the craftsman to set his price as might a landscape artist or a sculptor. Many feel with Mr. D'Ascenzo that the best results are obtained when the client gives the craftsman an allowance and the latter, knowing exactly where he stands, makes the best window possible for the sum in hand.

Since the general may sometimes be glimpsed through the specific, we may say that Mr. D'Ascenzo's thirty-foot clerestory window for St. Thomas's, a work of the highest grade, cost from $20,000 to $30,000, and Mr. Connick's Great East Window at Princeton, from $30,000 to $40,000. The tariff laws do little to protect the glass craftsman. Whereas the Hawley-Smoot bill raised the duty to 60 per cent, ecclesiastical windows valued at $15 or more per square foot are admitted duty free.

But the ranking American glass men, confident of their own superiority, are practically impervious to foreign rivalry. They have other and more urgent cares. No one who has not undertaken to fill a stained glass contract can appreciate what havoc a vestryman and particularly a vestryman's wife can wreak with the artist's projects. It is the vicious plight of the decorative artist that he must convince those who support his labors that what they want is not necessarily what they ought to have nor what they themselves would like after it was executed. And the human indisposition to be convinced by argument is reflected in the damage, via bad stained glass, already apparent in some of the country's most notable churches. But even these esthetic *faux pas* have their value: already the Connick, D'Ascenzo, and other splendid windows are truly shining by contrast. Impressions are slowly being made which are certain to speed the revival of the misplaced art. There may be those who will object to glass saints in these days of failing creeds, but few will deny that, saints or no saints, the medieval art of stained glass is an infinitely potential heritage to the modern world.

ITINERARY FOR THE STUDENT OF MODERN AMERICAN STAINED GLASS

Outstanding examples of modern American stained glass are confined to no one part of the country. The diligent connoisseur will make these visits:

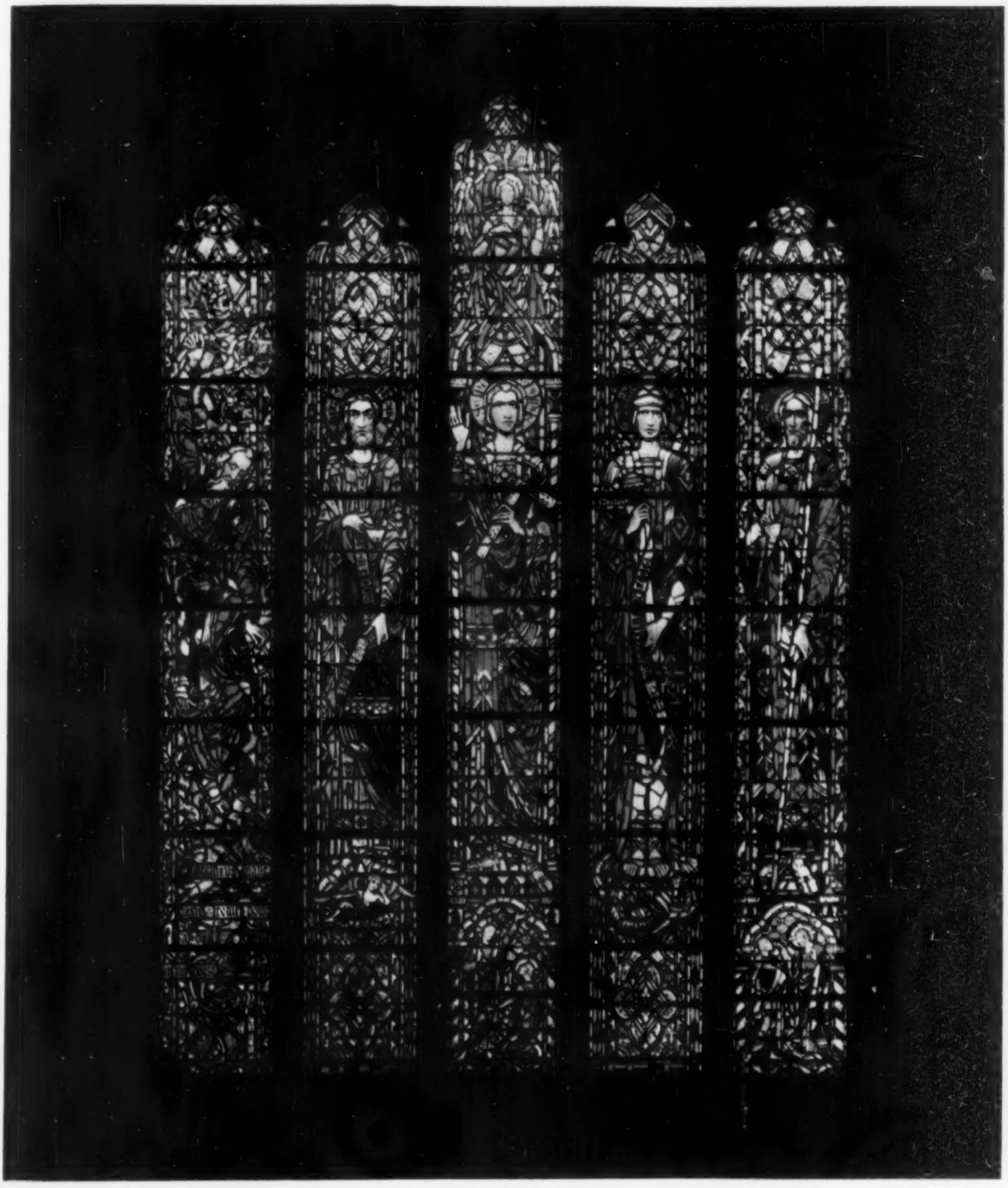
In *New York City*, the new Riverside Church, St. Thomas's, the Central Presbyterian Church, and the Temple Emanu-El have fine examples of Nicola D'Ascenzo's work; the Chapel of St. Martin of Tours in the Cathedral of St. John the Divine and St. Vincent Ferrer's have Charles J. Connick's work; and the Riverside Church, work by Wilbur Burnham. Mercersburg Academy, *Mercersburg, Pennsylvania*, also has noteworthy glass by both Connick and D'Ascenzo.

At *Princeton University*, the Memorial Chapel has two great windows, by D'Ascenzo and Connick. At *Valley Forge* are D'Ascenzo's Washington medallions, at *Bristol, Pennsylvania*, his Episcopal Church windows.

In *Philadelphia*, important work has been done by D'Ascenzo for the Church of the Holy Child and the Fidelity Trust Company. Excellent Connick glass can be seen in Philadelphia at St. Agatha's.

Yale University, in New Haven, has embellished its Harkness Memorial Quadrangle and Sterling Memorial Library with G. Owen Bonawit's vignettes in stained glass, while Sam Katz has made use of Bonawit's art for his *Centenary, New York*, home.

At *Chicago*, the Fourth Presbyterian Church and St. Paul's have some beautiful Connick glass. *San Francisco* is proud of Connick's work in Grace Cathedral and in St. Dominick's. At *Los Angeles* are the fine Burnham windows of St. Vincent de Paul's.



A SECTION OF NICOLA D'ASCENZO'S CLERESTORY WINDOW IN ST. THOMAS'S CHURCH, NEW YORK CITY

Skyscrapers: Prophecy in Steel

FORTUNE brings to an end its inquiry into the most spectacular of industry's instruments. An answer to critics and a glance to the future. Tomorrow's city, beautiful from ocean and air. Governments shall determine what the man in the street will see.

FORTUNE'S skyscraper, begun (in print) five months ago, is now (in print) completed. The land has been assembled, the financing arranged, the architects, engineers, and builder employed, the executive staff set up, the plans and specifications prepared, the materials purchased, the site cleared, the foundations driven, the steel erected, the framework sheathed, the elevators installed, and the space (hypothetically) sold. Five months is not an excessive time for the construction of a skyscraper even in print. But one of the greatest of New York's towers was built in steel in eleven.

It remains to examine the completed object. There is still considerable doubt in the minds of the critics whether these monsters are benign or malevolent, whether they are about to inherit the earth or to perish from natural inappropriateness like the great elk of Ireland, whether they should be permitted to breed or should be at once exterminated. There is also speculation as to the changes which adaptation to environment may impose upon them if they continue to exist.

FORTUNE therefore concludes this series with a glance toward the future. There has been much crystal-gazing, palm-reading, prognostication, theomancy, divination by birds, divination by entrails, by dregs of tea, by mice, by red-hot iron, and by plain, old-fashioned hope and fear. FORTUNE will attempt to prophesy by steel and stone.

• • •

SIX or seven years ago architects in England, reacting to the general post-War literary excitement about the skyscrapers of New York, discussed the possibility of such buildings for London. It was never, presumably, a very serious discussion. The Royal Institute of British Architects responded, in the words of a commentator, "most sensibly" to a paper picturing the lamentable consequences of skyscraper construction in America —the congestion, the subways, the crowded streets, the ugliness—and the Institute passed on to more pressing matters.

Subsequently one of the many apologists-abroad with whom America is so plentifully blessed contributed an article to a London architectural journal commending the Institute for its perspicacity and good sense. The following matter is extracted from that article. It is characteristic counter-skyscraper propaganda.

"The exciting cause of the high building was the discovery, during the 'eighties, that the ground rent of a plot increased in value in proportion to the height of the building erected thereon.

". . . one must judge the achievements of the high building from the base rather than from the pinnacle, and from this point of view it is neither a social, an economic nor an esthetic success.

"As for the effect upon the life of the community that has been caused by the congestion of the workers in great lofts and offices during the day, and in dismal distant dormitories at night, the waste of energy, time, and human strength . . .

". . . New York is rapidly approaching the point where, as in Imperial Rome, vehicular traffic will be prohibited from its principal streets during the day; where, in spite of numerous man-sewers, called subways, which have been provided for the plebeians, the transportation system will be no longer adequate to its daily load.

"If new enterprises must find a place in London, it is much simpler to provide for the steady exodus of the older industries to garden cities and villages . . ."

Such is, in general, the case against the high buildings: that they are the product of greed; that they are not beautiful (or that, even if they are beautiful, they stand in such clumps that you can't see the trees for the wood); that they are responsible for the remoteness of a man's home from his office and the difficulties of transportation in between; that those difficulties of transportation (due, as always, to the skyscraper) are such that shortly street traffic will cease and will be replaced by tunnels and viaducts to be paid for by the taxpayers, etc. (This particular thesis is, of course, carried out to its logical conclusion: that the skyscrapers are responsible for the failure of the school system because the money which ought to go into new schools is sunk in new subways to carry the blood supply to and from these unnatural hearts.)

The emotional basis of the attack is plain enough. The propagandist confuses the skyscraper with the modern city. He does not like the modern city (an attitude in which he is certainly justified). And he chooses for blame its most conspicuous feature. Certain African tribes, following the same line of reasoning, attribute drought to the secret defects of their kings, and it is notorious that hard times invariably are the fault of the government in power. The difficulty is that the same drought sometimes extends over nations having other kings. Boston is a city in which the building height is, with few exceptions, limited to twelve stories. And the only difference between Park Street Under at six o'clock in the afternoon and Times Square Subway Station at the same hour is in the names. The office workers live as far out or farther. And if a Huntington Avenue surface car is preferable to a Broadway Express it must be because the Bostonians are sweeter to wrestle with than the inhabitants of Riverside Drive. Even the architects of London, critical of the social effects of the skyscraper

METAL WALLS

A description of the metals used to sheathe modern skyscrapers is rendered difficult by the confusion of trade names. *Nirosta, Enduro, Rezistal, Allegheny Metal, Defistain, Duraloy, Nickel Steel 18 & 8, Lasco 18 & 8, Stainless N and Stainless U, U. S. S. Chromium*, etc. look very different in print. They do not look so different to metallurgists. Their history is this: prior to the War, experimentation was under way in England and Germany to find a gun lining which would resist corrosion and erosion. The result in England was a high-chromium, non-ductile alloy now known to commerce as *Stainless Steel*. It is useless to the builder. The result in Germany was chrome nickel steel, an alloy of iron with 18 per cent chromium and 8 per cent nickel. Chrome nickel *is* ductile and *can* be used in building. During the War the Krupp patents protecting this alloy were seized by the U. S. They were sold to the Chemical Foundation. The Chemical Foundation licensed, and still licenses, the manufacture of the alloy under the seized Krupp patents, and *Allegheny Metal* is the product manufactured under such license (and under patents of its own) by the Allegheny Steel Company. It is used on the Empire State Building. But the Krupps were not dead. After the War they took out American patents on certain heat treatments in connection with the manufacture of the alloy. The result they called *Krupp Austenitic Number 2 (KA 2)*. They then licensed American companies to manufacture by this process and to use the name of *Nirosta* to designate products so licensed. Central Alloy Steel Corporation is one of the licensees. Under the *Nirosta* patents and the original Krupp patents (for use of which it still pays the Chemical Foundation) it manufactures *Enduro KA 2*. This metal was used on the Chrysler Building and on the Empire State. Other licensees under the *Nirosta* patents are Crucible Steel Company of America (*Rezistal*), Ludlum Steel Company, The Babcock & Wilcox Tube Co., etc.

These alloys, like all other metals, only give the maximum resistance to corrosion after the surface has been freed of oxides and other impurities. This is usually done by polishing. After polishing, the surface can be changed by various processes so that it no longer has a high polish, without affecting the corrosion-resistance. Thus the metal surface of the Empire State Building has a flat, "Tampico-brush" finish which, leaving the surface polished, destroys its brilliance, and this surface is expected to stand up for the probable life of the building.

International

HOUSTON

Sudden tall needles on a flat plain, best-known Houston buildings are the Niels Esperson, Post-Dispatch, Second National Bank, the Petroleum.

Fairchild Aerial Surveys, Inc.

PHILADELPHIA

Philadelphia is third in number of tall buildings (New York is first, Chicago second). Highest Philadelphians: the Drake and the Lewis.

International

MIAMI

Among the most favored of American winter resorts is Miami, whose not unimpressive skyline has been contributed almost entirely by its waterfront hotels. Landmarks are its City Hall and its Ingraham Building and its Daily News Building. Undaunted by the winds and waves that swept its shores and homes away in 1926, Miami with confidence has continued to build. And with every other city in the U. S., it has not eschewed skyscrapers.

Aerial Surveys, Inc.

CLEVELAND

Those two devoted brothers, Oris P. and Mantis J. Van Sweringen, gave to Cleveland its tallest Terminal Tower, whose fifty-two stories rise 708 feet. Dwarfed (but not into obscurity) are the Ohio Bell Telephone Building (356 feet) and the Union Trust (260 feet).

Fairchild Aerial Surveys, Inc.

HOLLYWOOD

Hollywood is incorporated in Los Angeles where one may only build to a height of approximately 150 feet (however, by very popular vote, the City Hall was allowed to run up to 438 feet). Above, the far-famed Egyptian and Chinese theatres of Mr. Sid Grauman.

Courtesy Feragil Galleries

MANHATTAN IMPRESSION—*BY ROBERT HALLOWELL*

To the right the Standard Oil Building, to the left the little known Norton Lilly Building. A New York artist depicts a corner of lower Manhattan now rivaled in height and fame by the skyscrapers of the Forty-second Street district.

as they may be, know something of congestion. And Paris, that paradise of the low-roof school, has read as much about the difficulties of *circulation* in the last five years as any city on earth. As for Imperial Rome, if wheeled traffic was indeed excluded from its streets during the day, it was hardly because of the crowds pouring down from the third and fourth stories to get lunch.

But the emotional basis of an argument and its reasoning are (or ought to be) two different things. You can forgive a man who lives in continuous pain, or even in continuous discomfort, for wanting a scapegoat. But he mustn't put it that way if he wishes to persuade his contemporaries. He must not, for example, say that the skyscraper owes its origin to pure acquisitiveness—to "the discovery, during the eighties, that the ground rent of a plot increased in value in proportion to the height of the building erected thereon." For one thing the statement is not discreet. And for another, it is exceedingly foolish. There never was any such discovery. A landlord who did not know that his rent increased as he increased his rentals would not have survived even in the seventies or the sixties or the year 1. What landlords *did* discover (and long before 1880) was that an increase in the size of a building would not increase their rent-rolls unless there were a demand for the space.

In other words the exciting cause of the high buildings lies much deeper than the acquisitiveness of landlords. It is to be found in the sudden and pressing demand of a great many people to rent offices in the same street. It occurred, if you will, in the eighties or thereabouts. But the landlords did not induce it. On the contrary. It was the consequence of a change in the structure of American commercial life. Prior to that time the only people who had much use for offices in the business districts were lawyers, notaries, consuls, a few brokers, and so forth. Manufacturers had their offices at their plants and communicated with their customers and their bankers by letter. The relation between the various industries and financial agencies was remote, rigid, occasional, and patterned on the then English model. Wall Street was a center of interest, not a center of control. What happened toward the end of the century was that attempts were made to organize and relate the various units of business either perpendicularly by industries (the "Trusts") or horizontally by common ownership and control ("The Robber Barons," "Wall Street," etc., etc.). The attempts were successful and the association between businessmen and their lawyers, manufacturers and their banks, merchants and their creditors, became so close and so continuous that neither letters nor the telegraph nor even the new-fangled telephone were competent to handle it. When the Colorado Bonanza Company was owned and run as he pleased by the Old Man, an office at Cripple Creek and a couple of trips a year to New York were all that anybody could ask for. But when the Colorado Bonanza Company was owned by the people who bought its stock on the New York Stock Exchange and run by a board of directors who were, for the most part, bankers and lawyers in New York, the company could not function without New York agents and a New York office.

Fortunately for the field marshals and war lords of the industrial age, the demand for space in the financial centers coincided (as social changes frequently do coincide with engineering developments) with the successful use of structural steel in the erection of tall buildings. If a great many people want to live in the same street within a distance of a few blocks, there is no way of satisfying their desire but to install them in tiers, one on top of the other. And the Home Insurance Building and the Tacoma Building in Chicago, built in the late eighties, showed how that could be done.

The first skyscrapers, that is to say, were thrown up by the centripetal force of the industrial age. They were tools of industry. They are still tools of industry. And so long as the development of American industry is toward greater and greater centralization, they will be needed and will be built.

The whole vice in the attack on the skyscraper rises from the failure to perceive that the skyscraper is not, in its pure form, a building like another but an instrument of commerce. If it were merely an architectural innovation, the fact that it cuts off sunlight and concentrates large populations would be an adequate reason for legislating it out of

existence. If the steamboat were merely another ship, its smoke and its tendency to occasionally submerge several thousand people at once would make a strong case against it. So even more strongly of the railroad train, which certainly adds nothing to the peace and security or beauty of life. Most, if not all, the instruments of modern industry detract in some way from the pleasantness of existence. But they are to be judged, so long as the industrial age continues, by their efficacy as instruments. It is arguable that the whole industrial development of the last fifty years is, humanly speaking, a mistake. But it is unsound to load the whole onus of that argument upon the beams and columns of one only of industry's tools.

It does not follow that the tool has always been used for the purposes for which it was developed. Any more than the roaring automobiles of an Indiana Saturday night are exercising their functions as agencies of transportation. There are avenues in Los Angeles where skyscrapers stand alone and remote from the present center of the city like four-poster beds in a cow pasture, and there are skyscraper nucleuses in Texas towns which have no justification in fact. As well as residential skyscrapers in New York which are mere luxuries for the very rich. Such structures are certainly an abuse. But also they are explicable enough. It is the common fate of all successful architectural innovations that the solution of a practical problem becomes in time an esthetic expression altogether divorced from the problem solved. The history of Gothic architecture is the great example. In the case of the skyscraper, the height which was necessary for administrative concentration in congested areas has become important in and for itself. And skyscrapers are built in Texas for no other reason than that their arrogance and exaggeration and pride correspond to some obscure requirement of the time and place.

FORTUNE, therefore, in its prophetic rôle, foresees a long life for the skyscraper and a numerous (if sometimes illegitimate) progeny.

What the skyscraper of the future, what the city of the future, will look like is another matter and one which demands more courage of the prophet. Mr. Hugh Ferriss has given expression in his drawings to a crowded and weighty imagination which may perhaps influence his fellow architects. But FORTUNE prefers, for all practical purposes, to do its crystal-gazing in the glass of Mr. Lamb's Empire State. The Empire State Building is a date in metropolitan architecture. It indicates, with its broad base and its free shaft, a means of realizing the city of isolated columns. And since its form is the expression of economic as well as esthetic ideas, its example has extraordinary power. If the building is successful in its rentals, it will dictate the architecture of New York for some time to come. And that architecture will constitute an adequate reply to the critics who maintain that the skyscrapers, in spite of their height, are insignificant because they cannot be seen.

In design also the Empire State and the News Building in New York are significant. Because many recently constructed buildings have been endowed with modernistic lobbies it has been assumed that the skyscraper of the future will be modernistic. Nothing could be less intelligent. The modernism of most contemporary American interior decoration dates from (and will date with) the International Exposition of Decorative Arts held in Paris in 1925. It is a synthetic, not a true, modernism and the expression of an architectural tradition already in decay. The new spirit in architecture is entirely opposed. It is technical. It proposes to make of engineering an esthetic activity, to compose its buildings in masses of volume, and to simplify its surfaces to the point where they appear merely as the geometric boundaries of the volumes created. It avoids ornament because ornament breaks the surface and destroys the rigorous unification of the whole. It is true that this new spirit in architecture is, so far, as European as Mr. Chanin's clamorous veneers. Its prophet is the Swiss, Charles-Edouard Jeanneret, Le Corbusier, and its best practitioners are Le Corbusier; the Dutchmen, Oud and Rietveld; the Germans, Gropius and Miès van der Rohe; and the Frenchman Lurçat. But although its contemporary expression as art and its pamphleteering are European, it is indigenous in America because the engineering through which it proposes to achieve its ends is indigenous in America. And it will

Courtesy Ferargil Galleries

CHICAGO IMPRESSION—*BY ROBERT HALLOWELL*

No less impressive than Manhattan's yearning towers are Chicago's skyscrapers. With the flag on its tower is the Tribune Building, to its left in the background is the Medinah Temple. The London Guarantee & Accident Building is in the center.

certainly achieve its American expression.

The matter of materials is equally hazardous. It is like the question of what the young woman will wear. There are plenty of manufacturers of patent compositions who would like to see tomorrow's skyscrapers sheathed in their particular materials. But it remains to be seen whether they will be. What is fairly certain is the fact that skyscraper walls will no longer be built as walls but as the thing they are—curtains. A skyscraper wall carries no weight but the wind load, and there is therefore no occasion for constructing it of weighty materials. To hang a steel frame with materials which were originally used in building because they were strong and heavy and could be trusted not to crush is inappropriate. And yet most American architects use stone on their skyscrapers. Even Mr. Raymond Hood, whose News Building is as frank and lucid and lovely in design as any American skyscraper, placed, in his Chicago Tribune Tower, a Gothic mask of stone upon a skull of steel. The only reasons for such a practice are reasons of tradition and habit. There are materials available which satisfy the structural requirements and may, it would seem, create new esthetic possibilities.

Corrosion-resisting steel manufactured by American companies on American and German patents has been used in the dome of the Chrysler tower and the walls of the Empire State Building, and architects and engineers expect that all-metal buildings will shortly be common. An apartment house with glass and metal "walls" is planned for Chicago, and there seems to be no reason why the method cannot be applied in skyscrapers. There is a great saving in rentable area. In the Chicago building the metal walls give 1,100 square feet as against 965 square feet permitted by masonry walls (a difference in the rental per floor, if the building were an office building, of $540; $4,400 as against $3,860). With proper insulation the three and one-half-inch metal wall equals a thirty-six-inch brick wall in heat and cold resistance. And if metal floors (all-steel battledeck) are used, the construction time can be cut from a year to eight or nine months, for the structure goes up like a Meccano set. And there is a saving in cost. It is estimated that an Allegheny metal wall, in place, insulated, lathed, and plastered, costs $1.53 per square foot as against $2.17 for masonry walls.

In addition to metal, there will almost certainly be a greater use of glass in the walls of skyscrapers. The Corning Glass Works is developing a glass which is neither transparent nor fragile, which will permit as much or as little light to enter as the tenant requires and which may be tinted for color effects. Glass has the space-saving advantages of metal, but will cost more than present exteriors.

As to height, it seems probable that the maximum economic height has now been reached and passed. Until elevators can be so arranged as not to eat into the heart of a building of more than seventy or eighty stories, it will not be profitable to exceed that level. The probability is that the prestige value of "the tallest building in the world" will carry one or two New York or Detroit or Chicago or Houston structures higher than the Empire State. But for all practical purposes the height of American skyscrapers is a function of the inventiveness of Mr. Lindquist and Mr. Bassett Jones and the elevator engineers of the next generation.

These various fragmentary prophecies add together to form FORTUNE's picture of the city of the future: a city of free clear columns walled in metal and glass rising forty or sixty or eighty stories into the air, a city from which the gawky totem poles and flat-chested silhouettes of the Grand Central district will be happily absent, a city beautiful from the air and from the sea. What it will be from street level the oracle neglects to say. That is a problem for governments. And the actions of governments none can forecast.

Publishers Photo Service

MINNEAPOLIS

Most prominent in this picture and most famed in Minneapolis is the Foshay Tower (thirty-two stories, 450 feet in height), an enlarged replica of the Washington Monument. Wilbur Burton Foshay, for whom it was named, has thrice built up fortunes in utilities; the collapse, November, 1929, of his third fortune provided front page news.

Fairchild Aerial Surveys, Inc.

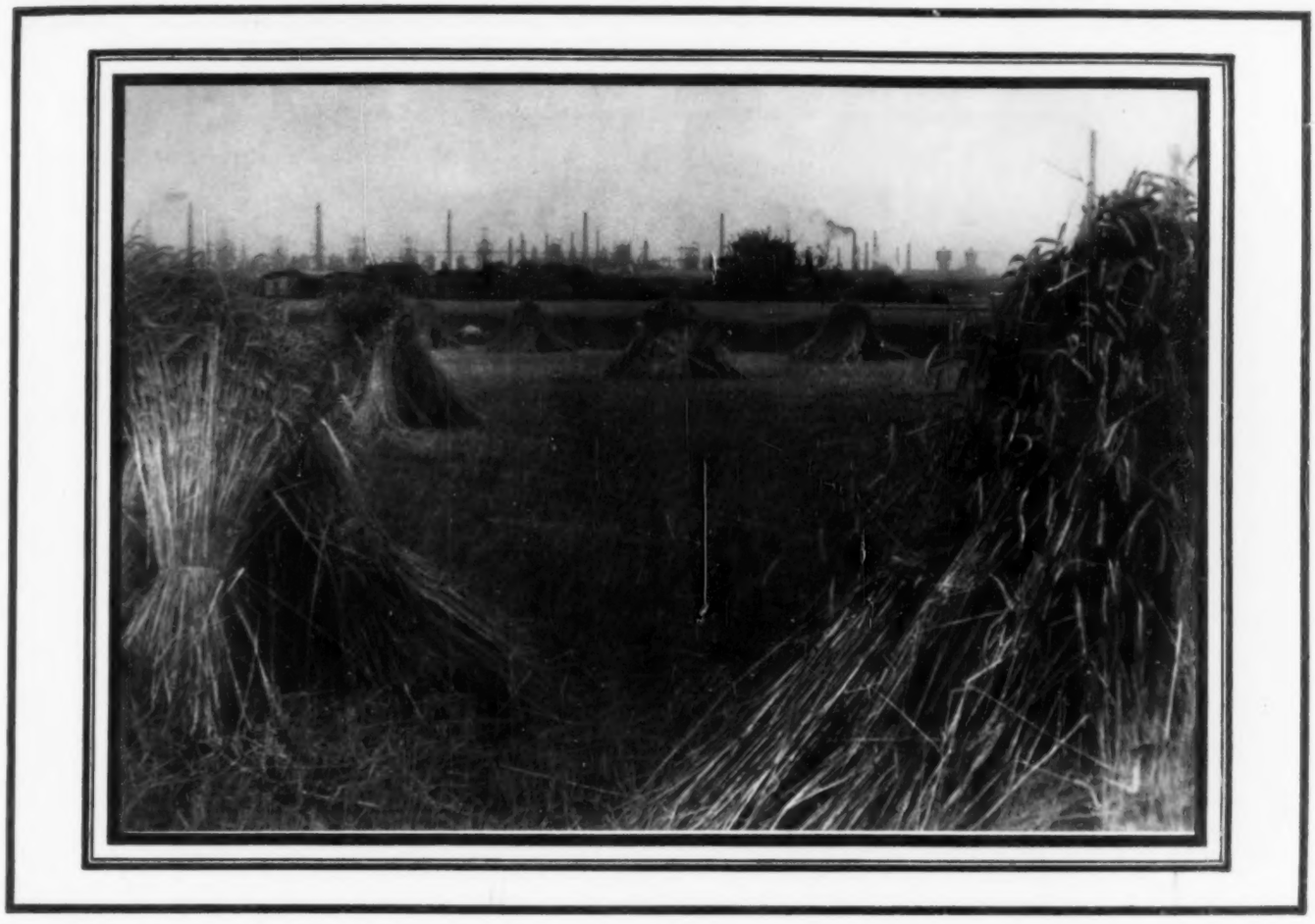
DETROIT

The downtown section. Detroit follows Philadelphia in number of tall buildings. Detroit is proud of the Penobscot Building, the Union Trust Building, the Barlum Tower and Book Tower, the David Stott and Fisher buildings, the Eaton Tower, and many another.

Fairchild Aerial Surveys, Inc.

BOSTON

Boston's best-known skyscraper is the U. S. Custom House Tower (thirty-two stories and 495 feet). There are also the United Shoe Machinery Building (twenty-four stories, 290 feet), "The Tower" (twenty-one stories, 245 feet), the Ames (thirteen stories, 188 feet).



Germany in the Workshop: An Industrial Portfolio

And the problems of an American photographer abroad.

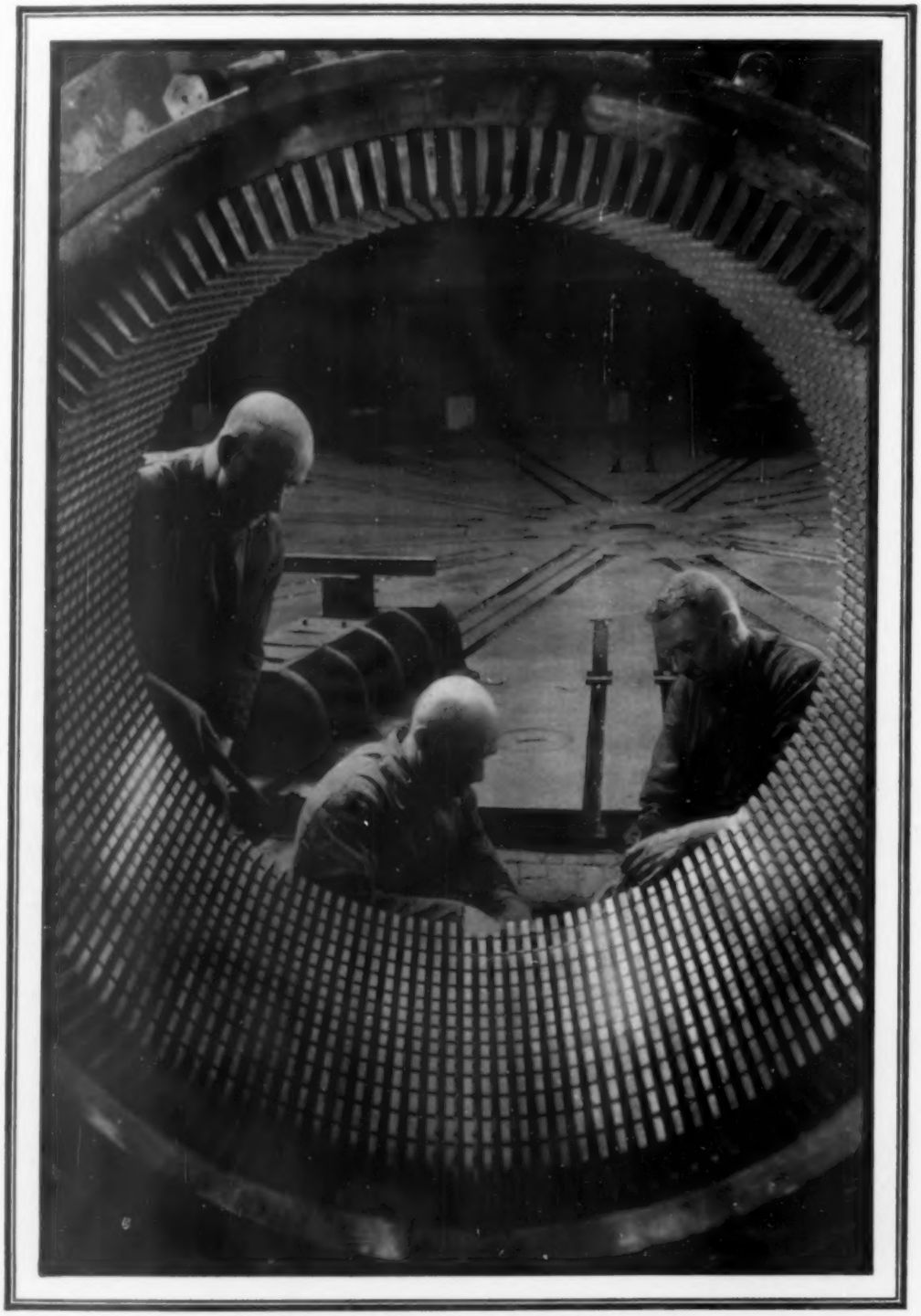
Berenice Abbott

THE charge was espionage. The prisoner was finally cleared, although the signature of Secretary of State Henry L. Stimson had made no impression. It was, finally, a portfolio of photographs of the Chicago stockyards which released Margaret Bourke-White (left) from the village jail of Bochum, Germany. Only these could convince the authorities that the photograph shown above was indeed part of a series intended for FORTUNE and not an attempt by a foreign government to blue-print Germany's vital industrial development in the Ruhr Valley.

The photograph shows in fact a section of the mile-long Krupp steel works at Essen. Its value to a foreign government, however hostile, would be nil. Nonetheless, Miss Bourke-White was permitted to go no nearer the plants, and even the taking of this photograph was the cause of an uncomfortable seven hours in jail. Throughout the Ruhr, where Miss Bourke-White last summer began a four-month tour of Germany and Russia, she met with suspicion and stubborn distrust. No photographer has been admitted to the great steel mills since the years preceding the War.

In Bremen, Miss Bourke-White found better treatment. Here lives Herr Ludwig Roselius, manufacturer of Sanka coffee, whose income is said to be the largest in Germany, and his daughter Hildegarde, who brought back many American ideas from her many courses at Columbia. Under their chaperonage, it was possible to wander with comparative freedom about Bremen's busy port. Two scenes of the North German

[*Continued on page 126*]



ALLGEMEINE ELEKTRICITAETS-GESELLSCHAFT

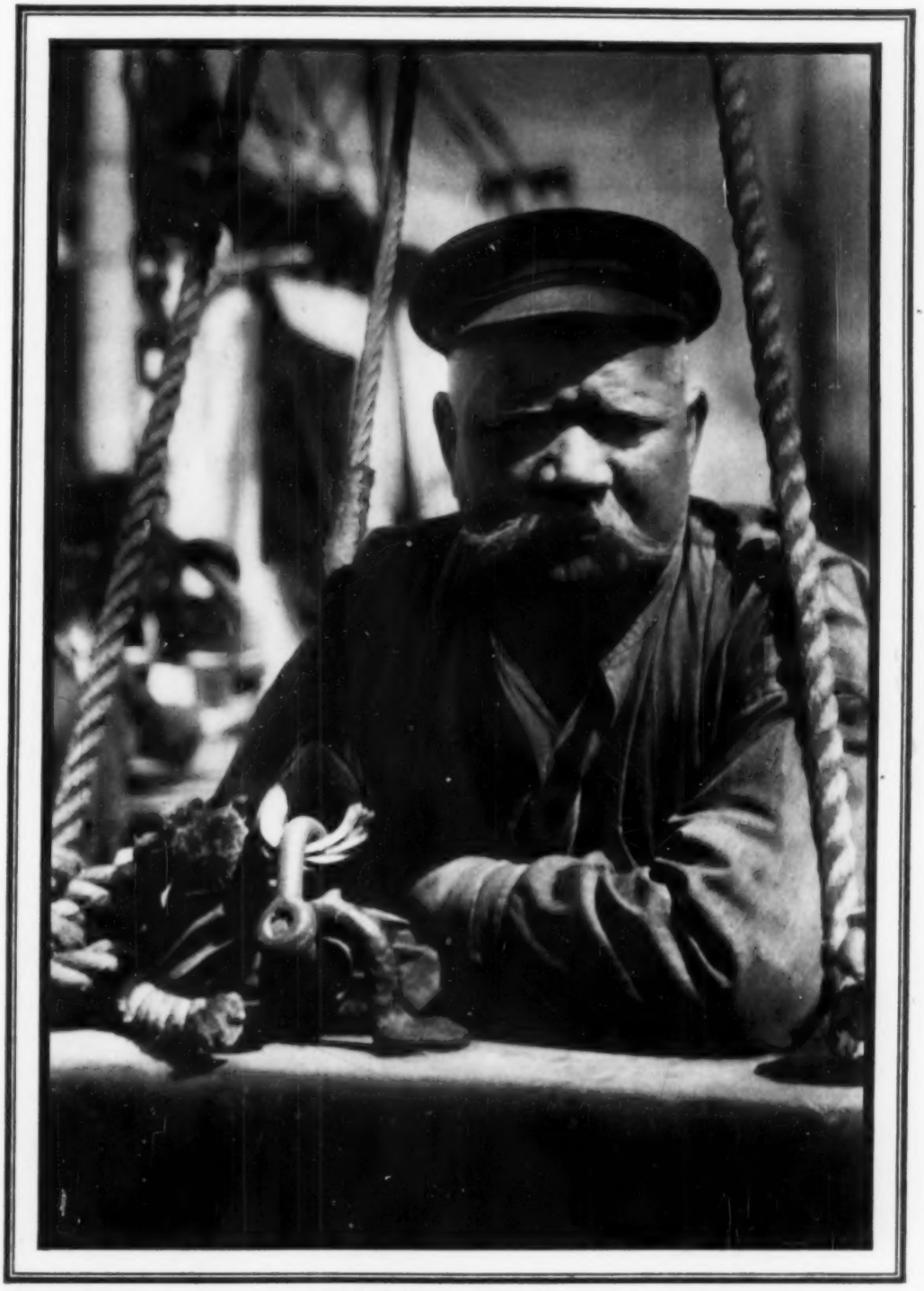
A generator stator in one of the seventeen plants of the formidable and important AEG, whose relation to Siemens-Schuckert is much like that of the similar General Electric Company to Westinghouse. Great geniuses of AEG were Emil Rathenau, the founder, and his son, Walther, moody, idealistic political leader. AEG has close agreements with G. E., is a reported ally in I.T.&T.'s European affairs.

UNIVERSUM-FILM AKTIENGESELLSCHAFT

During 1929-30 UFA released eight features in the U. S. None duplicated the prodigious success of 1926's *Variety*. Most important of the UFA stockholders is Alfred Hugenberg, also the most noted of German nationalists and the country's most powerful newspaper owner. Above is the sculptor's corner in one of the workshops at Neubabelsberg, Germany's small but compact Hollywood.

THE *BREMEN*, HOME AT BREMERHAVEN

Immediately after the War, the North German Lloyd prepared to recapture its trans-Atlantic prestige, and the docks and shipyards of Bremen's port began to hum. In 1928 were brilliantly launched the *Europa* and the *Bremen*, which immediately started anew the inter-line competition in speed and chic. The company owns 498 ships, with a gross tonnage of 922,426.



PORTRAIT OF A SAILOR

He at any rate has a job. He works for the North German Lloyd Line as one of their 5,173 employees in the North Atlantic service. But in Germany, unemployment increases and in the Ruhr are few such contented and well-fed Teutons. A brief official statement issued in October of this year announced that there were in Germany 3,088,000 persons registered as out of work and seeking jobs.

POURING THE HEAT AT OTIS STEEL COMPANY, CLEVELAND

Important as has been Miss Bourke-White's work in Europe, her great reputation was built in the steel mills of America. From such spectacular and challenging subjects as the above, she moved to the stockyards of Chicago, the Canadian pulpwood forests, the oil fields of Texas, garment shops in New York's Seventh Avenue, and many another U. S. industrial center.

★ TUG O' WAR ★

Modern advertising is a tug o' war. One advertiser trying to pull the consumer in one direction, his competitor pulling in another.

★

Victory goes with strength. But do not confuse strength with bulk. More powerful than "dominating space" is the skill that sways feelings, convinces minds, commands action.

★

YOUNG AND RUBICAM·INC
ADVERTISING
NEW YORK
PHILADELPHIA

The $3,000,000 Machine

Which New York society created for the mass production of débutantes. Function of Miss Juliana Cutting and why an advertisement in the newspapers would serve as well.

WHEN two of them walk in step and arm in arm down Park Avenue on the west side, a photographer pops up and snaps their picture. It will appear on the society page of the *Post* or the *Sun* or the tabloid *News* or in the gravure section of one of the Sunday morning papers. Probably a sophomore at Princeton will see it and clip it, carefully scissoring away the one he does not adore, and place it tenderly in his desk drawer along with the bill from Joe's and the University Store. On or a few days before the event of her ball, hers will be the only picture on the society page and the familiar caption will read, "Miss So-and-So, daughter of Mr. and Mrs. So-and-So, who will be presented to society tonight at a ball at the Ritz." The ball, of course, is the débutante's apotheosis. It generally occurs some time after the opening night of the Metropolitan Opera although the season officially starts earlier with the Tuxedo Autumn Ball. It is now considered proper for the débutante to gaze, if not at life in the raw, at least at life in the décolleté, and the sophomore at Princeton may now propose. At no other time in her life (with the probable exception of her wedding) will she wear such glorious plumage, be so much in the eye of her friends, or so gently nursed by the public press to which she is not supposed to give too much attention. But the débutante's ritual to which her ball is the climax is not without pain. She gets tired and probably thin from party after party; she is atrabilious in the morning when she wakes to realize she must attend another luncheon. And her parents share the pain. They must get used to having the telephone ring more than seems possible. They must not mind if the house is forever filled with young men whose clothes and faces look singularly alike. The mother must be calm when an old country neighbor, wild with fury, telephones to ask why some particular protégé of hers was not invited to the lunch on Tuesday. And among other things to be borne is the cost. For no matter how humble your daughter's curtsey to society, it is virtually sure to cost more than you'd like.

There is, if the débutante lives in New York, the matter of the ball at the Ritz or Pierre's. It is true that every débutante in order to come out does not stand in a receiving line grimly clutching a bouquet in her white-gloved arms and automatically flashing a cast-iron smile to each of the 800 guests who hurries by. There are nearly as many ways of coming out as there are types of purses or tastes. But the ball is typical. And the ball, even when it is modest, costs a pretty dollar.

At the Ritz, for instance, the average is above $10,000, but occasionally when people spend $10,000 for floral decorations alone the price rises. The ballroom may be rented for $400 or $500 and the music (most popular: Meyer Davis, the Embassy Club Orchestra, Markel's) should not cost more than $1,200 to $1,500. Supper is from $3.00 to $5.00 per stomach, and there are generally 800 or 1,000 stomachs. For $5.00 a supper, Captain Willy of the Ritz will have eighty-five waiters serve hot bouillon, creamed oysters and scallops with mushrooms, squab, breast of guinea hen or quail, a complicated salad, individual ice cream, petits fours, and coffee. During dinner and dance, 115 attendants will attend. The cigarettes and cigars cost about $200; the mineral water, $250. During supper you can dispense, if you wish, with an entertainment. On the other hand you are apt to pay an entertainer anything from $500 to $1,000 or more. Chevalier asks $5,000. If you serve champagne, and if it is not *de rigueur* (as the French governess taught the debbie to say) it is at least customary, you will discover that twenty cases at $100 will cost $2,000. A sum not difficult to figure out. But you should be glad to know that you will probably not spend more than $400 on tips.

It is easy to decorate the Ritz's Crystal Room with $1,000 worth of flowers. It is less easy but more impressive when one spends $5,000 to $10,000. Probably the most elaborate of decorations were the orchidaceous gestures of the Manvilles for Estelle, now the Countess Bernadotte, and the Huttons for Eleanor, now Mrs. Preston Sturgess, whose débutante party last year reportedly cost $75,000. At this latter party they had a fountain (in which nobody fell) playing in the middle of the Ritz ballroom, which, electrically operated, was installed with pardonable pride and great enthusiasm by Kottmiller. Honors for decorating the Crystal Room have in previous years been shared by Kottmiller, Wadley & Smythe, and The Rosary.

Since presumably you want guests at your party, you should be willing to pay about $800 to cover the cost of engraving invitations, the cost of mailing them, and the work of a secretary to send them and take care of the answers (it is universally the opinion in New York that you must send 3,000 invitations to have 1,000 people come to your party).

With these expenditures the ball should be paid for unless late in the evening a guest happens to throw a potted palm at a mirror. But that is rare. Thus, taking an approximate average of the above figures, we find that a débutante's ball costs:

Ballroom	$ 500
Music	1,350
Supper	3,000
Entertainment	500
Cigarettes	200
Mineral water	250
Champagne	2,000
Tips	400
Flowers	2,500
Invitations	800
	$11,500

Which can probably be made less, which can, but very easily, be made more. For the present, at least, the ball is over.

. . .

The débutante may emerge from her subdeb chrysalis in other ways. A dinner dance for 200 at the Ritz (Persian Garden) or Pierre's or Sherry's should not cost more than $2,000 and answers the purpose as well. Then, too, a débutante occasionally "slips out" with only an inconspicuous tea or perhaps no formal celebration whatever. It depends in the first place upon how well-known she is. If she has summered in Newport or the Hamptons and been to one or another of New York's fashionable schools, she will be invited to débutante parties and in general treated as a débutante. It is otherwise with the girl from Kokomo, whose parents sometimes insist that she be presented to New York society with as much fanfare as possible and who sometimes finds herself pitiably alone in the midst of 1,000 strangers who all seem to know each other and of whom she knows perhaps a score. But the papers will have carried her picture . . . "who will be presented to society tonight . . ." and Mrs. So-and-So's daughter will have accepted the invitation and the parent's friends in Kokomo will be impressed and perhaps out of it all their daughter will find a young man whom she can love, honor, and obey and do anything else to that might occur to her.

The débutante's ritual is complicated enough. She gives her ball, she must also give (her parents' friends generally give them for her) two or three formal luncheons, and she will attend a tea at her home and be duly admired and petted by her mother's friends, most of whom she knew and probably disliked before. There will be occasional theatre

Ever wake up, staring into space, the whole house suddenly on your mind?

A dream? A nightmare?

There they go now, *burglars! Not only your dearest possessions stolen,* gone—*but the furniture wrecked, doors smashed, locks broken, the whole house upside down! . . . Now, what was that! A leak in the plumbing? Drip, drip, drip! Water everywhere. Seas of it! . . . And that's not all! As plain as day you see the cook suing you for damages. She broke her hip on the poorly lighted stairway. . . . The furnace, too! What on earth could have caused that explosion? . . . Broken windows everywhere.*

Bills, bills, bills! Who's going to pay them? Why not let Ætna? Ætna's newest Home Owners' Policy offsets 5 ever-present hazards: Burglary—Water Damage—Liability—Glass Breakage, and Plumbing and Heating Repairs. With this policy you are relieved of all anxiety from these 5 sources of worry. The cost is very low, and may be paid in two semi-annual payments, if desired. Ask the Ætna-izer in your community to give you further details. This new combination of home protection is proving to be one of the most popular policies ever offered.

Ætna writes every form of Insurance and Fidelity and Surety Bonds. Ætna protection reaches from coast to coast through 25,000 agents. Ætna is the first multiple line insurance organization in America to pay its policyholders *one billion dollars.*

Ætna Casualty & Surety Company . . . Ætna Life Insurance Company . . . Standard Fire Insurance Company . . . Automobile Insurance Company of Hartford, Conn.

ÆTNA

ÆTNA-IZE

SEE THE ÆTNA-IZER IN YOUR COMMUNITY—HE IS A MAN WORTH KNOWING

parties (which her parents will give), and she will go to several others (which somebody else's parents are giving). It will all take a great deal of the débutante's time and a fair amount of her parents' money.

There remains the matter of clothes. The average débutante allowance is $200 a month, and the time during which she buys clothes is from September to March, which would give her $1,400 for clothes if she didn't have to pay for taxis. However, the parents provide and will usually give the offspring an evening wrap, three best evening dresses, and a fur coat. Most girls wear $7.00 or $8.00 hats and cheap evening slippers, satin-dyed and with buckles that can go from one pair to the next. It must be remembered that débutantes dance continuously and that no matter how gallant the swain, he is prone to step on her toes. The débutante's evening wardrobe will probably consist of four good evening dresses ($150-$250), four others for lesser occasions ($100), one new evening coat with fur, and one old one. And it is quite all right to wear the same dress twice in the same week, but *never* should one wear it on consecutive nights. Your débutante can dress on $4,000 and be very smart, and there is no reason why she cannot meet the situation with $3,000. Be it said, however, that the above statements are anathema to most of New York's smartest shops. Bergdorf Goodman, for instance, cannot imagine the débutante who does not spend at least $10,000 on her clothes. Their estimate runs:

Ten to twenty evening dresses at ($150 average)	$1,500
American ermine evening wrap	2,000
Two velvet evening coats trimmed with fur	1,000
Accessories—shoes, stockings, riding boots, etc.	1,000
Daytime dresses, suits	1,500
Fur coat	1,500
Other coat	400
Hats, lingerie	600
Sportingclothes(including riding habit, etc.)	1,000
	$10,500

A mother may bring a daughter into the world and consider it pretty much her own business. No such privilege is hers if she wishes to bring her daughter into society. She must find out just who is who in New York and tell them about her daughter. She must see to it that she invites the right people to her party and that her daughter is invited to the right people's parties. Even when there were supposed to be only 400 such people in New York, it took the rare ingenuity of a Ward McAllister to recognize them. Today it is probably the rather formidable Miss Juliana Cutting who takes his place. Of course no one in New York knows everybody. Not even Miss Cutting. But Miss Cutting so very nearly knows everybody (or at least their names) that she has become virtually omnipotent in the matters of society's routine.

Come September and most of New York's eligible bachelors will receive in their morning mail a printed notice reading in part as follows:

MISS CUTTING

would like to have your full name, also nickname, if any, and the address to which you wish invitations sent for the coming season, in order that you may receive any invitations sent you by her office.

(The advantages of filing one's nickname have never become obvious.)

In Miss Cutting's office are meticulously recorded many thousands of names. She knows exactly whose daughter is whose and whose father is yours. Gradually but irresistibly she has become the acknowledged impresario for the débuts of New York's society children.

From all this drearily detailed work Miss Cutting makes a great deal of money. Many a mother would pay far more than she asks for the prestige of seeing the Cutting list, and many a person would pay equally as much for the prestige of *being* on the Cutting list. Miss Cutting has been said to charge $500 for permission to see her list and for other services sometimes to charge as much as $1,500. These other services consist of sending the invitations (an item hereinbefore budgeted) and, as an expert on New York society matters, seeing to it that a débutante attends a proper number of the proper charity balls and the like. Charity affairs, by the way, will generally add another $1,000 to the parents' budget. Of course, Miss Cutting's information gives her a great deal of power. She could, if she wished, virtually ostracize. Or if she liked you she could see to it that you were invited to occasions which under any other circumstances you never would attend. Not that she does, but she could.

Miss Cutting is not alone in her field. For advice a mother may turn to Hostesses, Inc. or Tappin and Tew, both extremely helpful and pleasant. But it must be said that Miss Cutting possesses practically a monopoly in her unusual field.

This, then, is the $15,000 machinery which operates to create a New York débutante. With 200 or more débutantes a year, it means an expenditure of more than $3,000,000. It is the wan chaperones who line the halls of the Ritz (you may engage the services of a chaperone from Miss Dignum's for the moderate sum of $4.00 an evening). It is Captain Willy of the Ritz and Pierre and the mysterious omniscient Miss Cutting. It is the pretty little débutantes dancing until three or four every night in the cheap satin slippers and the expensive dresses. It is luncheon after luncheon, too many cigarettes, and eventual and fearsome boredom. It is the fear of not being seen somewhere and the great pain of going there. The whole purpose, on the parents' part, is to tell the world that their daughter, having now reached a certain age, is prepared to marry. Of a certainty it is a lavish way of making the announcement for, when you think of it, a notice on the society pages of the newspapers would serve the purpose as well.

A Few of This Season's New York Débutantes Whose Family Names Are Instantly Recognizable to Observers of Art and Industry.

DÉBUTANTE	*PARENT*
Justine Allen	Frederick Winthrop Allen (Directorates: Air Reduction, International Match, N. Y. Title & Mortgage, Otis Elevator, Remington Arms, Shell, Vanadium)
Florence Baker	George F. Baker Jr. (First National Bank)
Marguerite Brokaw	Howard C. Brokaw (Harriman National Bank)
Jean Chappell	George Shepard Chappell (*Cruise of the Kawa*)
Natalie Mai Coe	William R. Coe (gas, coal, railroads, horse racing)
Ethel Barrymore Colt	Ethel Barrymore
Sarah Davis	Norman H. Davis (statesman)
Laura Pope Day	Joseph P. Day (real estate)
Dorothy Ann Dillon	Clarence Dillon (Dillon, Read)
Alice Doubleday	George Doubleday (Ingersoll-Rand)
Doris Duke	Mrs. James B. Duke (tobacco)
Dorothy Fell	Mrs. Ogden L. Mills (N. Y. *Herald Tribune*)
Joan Fisher	Henry J. Fisher (publisher)
Helene Gales (engaged)	George M. Gales (Drug, Inc.)
Doris Havemeyer	Horace Havemeyer (sugar)
Eleanor Hoyt	Richard F. Hoyt (Hayden, Stone; aviation)
Mary Kelley	Cornelius F. Kelley (Anaconda Copper)
Margaret H. LeBoutillier	Philip LeBoutillier (Best & Co.)
Elizabeth Munn	Orson D. Munn (Munn & Co., *Scientific American*)
Zilph Palmer	Edgar Palmer (New Jersey Zinc)
Ruth T. Poor	Henry V. Poor (Poor's Publishing Co.)
Barbara Pratt	Harold Irving Pratt (oil)
Phyllis Pratt	Mrs. John T. Pratt (politics, oil)
Mary Ridder	Victor Frank Ridder (publishing)
Grace Green Roosevelt	Theodore Roosevelt Jr.
Amy Sterling	Louis Sterling (Columbia Phonograph Co.)
Natalie Swan	Joseph R. Swan (Guaranty Co.)
Gretchen Uppercu	Inglis M. Uppercu (Cadillacs)

YOUR PLANT
AN ECONOMIC FORTRESS
Yesterday
. . . BUT HOW ABOUT
Today?

ANCIENT fortresses with their towering ivy-covered battlements are but a more picturesque counterpart of obsolete plants in the world of manufacture.

For in industry, as in militarism, the most certain thing of all is change. Revolutionary changes in production methods . . . new inventions . . . aggressive competition . . . ever changing products . . . all are but representative of the many factors that have made "white elephants" of a number of manufacturing plants.

Is your plant one of the many that are comparatively new . . . designed to make money while running full blast . . . yet unable to turn a profit today while operating at two-thirds capacity?

If indeed you have any short values in your present production layout . . . need buildings or modernization . . . you can now cover your requirements in the greatest buyer's market in building—except for a brief period in 1922—that has existed since 1916. Industrial building costs today are nearly 20% under the 1922 low level.

Austin Engineers have helped many manufacturers take advantage of this situation . . . with up-to-the-minute ideas on plant arrangement . . . flexible layout for straight-line production capable of profitable operation even at fractional capacity . . . all the result of Good Engineering, always worth many times its cost.

Conditions today are favorable for immediate action. With 16 offices from coast to coast, Austin is close at hand . . . ready to discuss facts and figures, as applied to your problems.

THE AUSTIN COMPANY

THE AUSTIN METHOD

The Austin Method of Undivided Responsibility

Architecture, engineering, construction and equipment . . . separate responsibilities ordinarily . . . become one integral service, a single responsibility under the Austin Method. One nation-wide organization handles the complete project under one contract which specifically guarantees in advance total cost, time of completion with bonus and penalty clause if desired; and high quality of materials and workmanship.

ARCHITECTURE · ENGINEERING · CONSTRUCTION . . . CLEVELAND

$6,000,000,000

Is the nation's annual Christmas bill. This year, it may have a special meaning.

AN Elderly Gentleman with a Peter Arno mustache sat suddenly bolt upright in his chair near the window in New York's Union Club on December 20, 1916, and slapped viciously at an item of news in that morning's *Times*. "Good lord!" he exclaimed, in the tone he reserved for collapses in the market and the demise of friends. The Man on His Right paid no attention to him. The Elderly Gentleman said again, and louder, "Good lord!"

The Man on His Right lowered his copy of the *Times* sufficiently to peer over the top of it.

"Did you read about the Christmas trees?" asked the Elderly Gentleman. Emotion that would not be suppressed vibrated in his voice.

"Christmas trees?"

"Yes. A corner. Here, I'll read it to you."

> Investigators in the employ of Joseph Hartigan, Commissioner of Weights and Measures, in their endeavor to unearth facts which would bring down the high cost of living, came yesterday upon evidence which, they said, indicated that the Christmas tree market had been cornered. Mr. Hartigan was unable to learn, however, whether the conditions found in a few instances were general.
>
> He said he thought the price of trees represented a jump of at least 100 per cent over last year, but he did not think that a boycott on trees would be popular.
>
> "I have heard of a Christmas tree king before," said the Commissioner, "and, if the reports of my agents are true, it looks as if a man might clean up $100,000 or more by cornering the market."
>
> Quotations from the Producers' Price Current yesterday, showed that the prices of Christmas trees had been climbing along with eggs, butter, meat, coal, and almost everything else. Here are the wholesale figures: trees 8 to 12 feet, each $1.50 to $2.50; 15 to 20 feet, each $5.00 to $15.00; 25 feet and over, $1.00 a foot.

"Well," said the Man on His Right, "what of it?"

"What of it?"

"It's only $100,000, after all. You could hardly call that a corner."

"But it's *Christmas* trees. It's the idea of the thing. You know, Tiny Tim and all that sort of thing. Good lord, when I was a kid at home, we used to go out and cut our own. To think of a person getting a corner on 'em . . . exploiting 'em . . ."

"When you were a boy," said the Man on His Right, "Christmas was Christmas. And Business was Business. You could take all the Christmas there was and put it in one pile and then take all the Business there was and put it in another pile, and they would not look anything alike. But you can't make two piles today. They're all mixed up together."

Business *has* invaded Christmas and Christmas has invaded Business. So, although every drop of Druid blood in the veins of the Elderly Gentleman of the Union Club froze at first mention of a corner in Christmas trees, he finally had to admit that if a corner in Christmas trees was what the unnamed speculator wanted more than anything else for Christmas, there could be found no good reason in this generation why he should not have it.

Christmas and Business are so hopelessly tangled up with each other that it is practically impossible to find out just how much one depends on the other. It is plainly not a case of Christmas ivy twining itself about the trunk of a sturdy business oak. It is more a matter of two oaks growing in awkward self-satisfaction out of the fertile and pleasant loam of the Fall Buying Season. Except that there is an essential unity to an oak, and there is nothing approaching unity in the Business-Christmas business. There is action, and there is continuity.

1929

Even in the mad winter of 1929, above the dying bellows of the Bull Market, could be heard sleigh bells and the quaintly anachronistic "Merry Christmas to all, and to all a good night." Santa Claus managed by his very madness to divert attention from the carnage in Wall Street for a little while, and by that much enabled the U. S. citizen to throw up philosophical bulwarks against the the bad times that were advancing on him.

The Christmas shopping season begins in live earnest on the day after Thanksgiving. Many a department store intrudes loudly upon Thursday's holiday quiet to remind its neighbors by means of pageant or parade that Friday morning is the time to begin to buy. While many thousands of people lined Broadway in New York, Summer Street in Boston, and equivalent thoroughfares in most of the principal cities of the country last year to watch the antics of Santa Claus and his venal clowns, thirty-five heads of electric light, heat, power, and rail companies sat in a conference with President Hoover in the White House and pledged themselves to $1,810,000,000 worth of new construction. "Black Wednesday," November 13, was still news, and "Black Thursday," December 12, was only two weeks in the future. Statisticians had not yet finished laying end to end the dollars lost in the spasmodic contraction of market valuations. Eddie Cantor was reaping royalties on his funny book, *Caught Short*. Everyone was finding it extremely difficult to breathe in the vacuum created by the sudden departure of paper profits.

But inasmuch as Santa Claus's business had already progressed through all the stages of buying and most of the stages of store decoration and the training of extra holiday help, appreciable curtailment of plans was impossible. For all that grander gadgets than ever before were on display, there were deserted store aisles, beseeching looks upon the faces of department managers. And there were reports of stores which complained that in the throngs of people who crossed and recrossed their thresholds, there were only a few who actually made purchases. Particularly hard hit were jewelers who had made up expensive "gift numbers" for holiday sales which never were completed and the couturiers who were buried under an avalanche of cancellations of orders. Santa Claus, arriving on the day after Thanksgiving, had a sense of dropping in by mistake upon his own funeral. Here were the toys and baubles, the hosiery and vacuum cleaners, the emerald brooches and the electric refrigerators. In a million mirrors he saw his effigy dressed up in his own costume with the smell of mothballs still upon it. But the eyes that peered out through the gap between crepe whiskers and crepe hair were dubious.

Then came inventory week. For all the sad tales of deserted aisles, many and many a department store head reported that he had felt no appreciable reaction to the market situation in his Christmas sales. People were expecting a return to prosperity by spring in those days.

1930

But any department store manager who thought that he had already weathered the storm soon found the seriousness of his miscalculation. Unemployment first, and then curtailment of pay rolls during the months that followed, slowly but surely reacted upon his trade. The graph of his sales, unless his store was in a singularly fortunate bailiwick, gradually dropped downward. Not even normal seasonal upward movements were followed. In August, sales were off 9 per cent from 1929's August record, and the average for the year's first seven months (despite, on the whole, remarkable steadiness during the late winter period) was off 6 per cent. Thus did the department store, always a laggard in reflecting business conditions, at length show

OLD COLONY
TRUST COMPANY

17 COURT STREET, BOSTON
Affiliated with
THE FIRST NATIONAL BANK *of* BOSTON

★

*Many who do not reside in Massachusetts will find it expedient to establish a Trust, keep securities or employ other fiduciary services in that State. * * Its favorable laws levy no property, income or inheritance tax on securities of non residents. * * As* New England's *largest Corporate fiduciary,* OLD COLONY TRUST COMPANY *solicits your business.*

★ ★ ★ ★ ★ ★ ★ ★ ★

A copy of a booklet of interest to non-residents of Massachusetts will be sent to you promptly upon request.

what had already been shown in other divisions of business and trade. When department stores were off 9 per cent, a new low for automobile production (55 per cent below 1929's August) had been reached. September's steel production was the lowest (with the exception of July, 1924) that it had been since the winter of 1921 and 1922. The consumption of electric power fell far below its trend line, and its decrease during the first week of October (5.1 per cent below 1929's figures for the same period) was the greatest to be reported since September, 1921. On October 4 the *Railway Age* noted that for the first time in railway history, car loadings were as small as they had been ten years before. During the slump of 1921, freight business was almost 22 per cent greater than it was in 1911. And in mid-October the daily average of 300 common stocks was five points below the rock bottom average of November, 1929. The thermometer dropped, putting an end to almost all outdoor work. A disheartening influx of jobless men into urban centers was beginning.

The depression, in short, had reached a point below which it could not penetrate very far, and businessmen, politicians, and economists began to talk about concerted and determined remedial action.

The needed thing, all agreed, was an acceleration of spending. An increase of $267,000,000 in savings deposits throughout the U. S. between June 30, 1929–June 30, 1930 indicated that even with lessened income people were setting aside greater liquid reserves—a hesitancy to spend which accelerated the forces making for reduced business activity. If these reserves could be released, if goods could be started moving at a more rapid rate, if shelves could be depleted, then the wheels of production could be started revolving, idle men and idle capital put to work, and the tide turned. Philadelphia began a determined "Buy Now" campaign and exhorted the rest of Pennsylvania to follow suit so that that state could come out of the slump first.

• • •

It is possible to do one's Christmas shopping almost anywhere. There are businesses that exist only by virtue of the holiday trade. Of fireworks, even, one-fourth are sold then, because below the Mason-Dixon Line Christmas and not July 4 is the day of pinwheel and firecracker. Were it not for Christmas, novelty shops and greeting card houses, many of them, would vanish. But it is in the department store where novelty shop and toy store are side by side and plum pudding and mufflers are sold under the same roof that Christmas madness is collected in one grand *mêlée*, there that Santa Claus makes his headquarters.

Each year in Manhattan, R. H. Macy & Co. does him honor with a parade of Gargantuan balloons, designed by Tony Sarg and constructed by Goodyear. The parade comes down Broadway on Thanksgiving Day, and in 1929 consisted of ten balloons representing the Katzenjammer family of comic supplement fame, plus a dragon 177 feet long, a dog, a turkey, and a horse and rider. All of the balloons with the exception of the dog were inflated with helium (of which gas R. H. Macy & Co., by virtue of this annual parade, is the largest commercial user in the U. S. except for companies actually operating airships) and were released after their march at the entrance of Macy's store. To each was attached an offer of $100 reward for return.

In 1929, also, The Fair in Chicago provided what was presumably fitting Christmas entertainment in vaudeville show in which Sophie Tucker was the headliner. The inimitable Miss Tucker, famous for her bawdy lieder, was assisted by Bert Lytell, prominent actor in what Miss Tucker calls the "movizz," Fisher's Animal Circus, oriental magicians, jazz orchestras, and several local masters of revelry. The entertainment was staged in an arena set up in the toy department. Audiences of 2,000 were entertained at each performance. In addition, for a fare of twenty-five cents, children were carried in a zeppelin to Santa Claus and were presented by the saint with a surprise package, photographed on a pony's back with Santa Claus at four pictures for fifty cents. (Not only The Fair has discovered the value of the surprise package racket, highly recommended by *Playthings*, foremost trade paper of the toy men. By this simple device, it is often possible to clean up tremendous stocks of otherwise unsalable gimcracks.) The Fair not only sold surprise packages but gave away some 50,000 Bob White whistles.

Scarcely a city or town in all the broad land does not reflect the urge, what with Filene's clerks' choral society coming down to the store early in the frosty Boston mornings to send carols ringing up and down the aisles (and out over a wide radio hook-up) and Wanamaker's hiring Robert Edwards, the ukulele impresario, to paint fresh murals all over the walls of the toy department while psychologists in attendance advise parents, aunts, and Old Ladies from Metuchen what to buy for the three-and-a-half-year-old introverts (but that is mixing Christmas and Business up with Art and Science as well and might lead almost anywhere). And what with Kaufmann's in Pittsburgh bringing John Vassos, the Greek artist who made Oscar Wilde contemporary, to their store to tell them how to make the place look like one of his Packard custom-built body advertisements or the *Ballad of Reading Goal*. And what with Bamberger's sending out a fifty-four-foot float (fifty-four feet, four inches, to be exact) over most of northern New Jersey with either reindeer and eskimos or just plain old fashioned carolers on it, and what with Santa Claus's son (pat. applied for!) coming to the Jordan Marsh Company in Boston by airplane, power boat, and motor cavalcade. And what with Christmas, finally, in its most Dickensian aspects organizing itself along the approved lines of Going Business or a Political Machine—kettles and chimneys on every street crossing, bells jangling, coins dropping . . .

Thus, in 10,000 department stores, does one find justification for the oft-raised lament that Christmas has become what archæologists say it once was—nothing but a pagan festival: Sophie Tucker singing *Eli Eli* by request . . . psychologists . . . airplanes . . . surprise packages . . . street parades . . . performing midgets . . . 50,000 whistles Bob-Whiting in Chicago . . . Thanksgiving behaving as a curtain raiser . . . somebody patenting the "idea" of the son of the grand saint . . . and, as Walter Winchell says, "you and you and you and you" spending SIX BILLION DOLLARS in an "average" year.

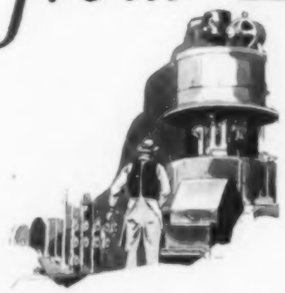
• • •

Santa Claus has already put in his appearance in some quarters this year. This Thanksgiving week sees another Macy parade. And the yearly Saturnalia opens from Portland to Portland on Friday. That is a fact—one of the few facts that business prognosticators and trend calculators have had this year to be thankful for. You will go to your favorite store and buy presents for your wife or your husband and for the children and for Aunt Fannie and Uncle Horace. How much you will spend is the riddle which Santa Claus and his thousands of merchandising assistants have tried to solve in advance. And your favorite economist has been staring over Santa's shoulder watching him write down figures and erase them, hoping to be the first to announce the answer. Santa Claus will not know before December 26. But it is certain to be in excess of $5,000,000,000. That is the gloomiest prediction that anyone has yet made. From the industrial East where business is bad to the far Northwest where it is fair, department stores are preparing for more sales than last year, though on account of the almost universal recession of commodity prices they do not expect that it will much more than equal last year's dollar volume.

Their hopes are, it must be said, sanguine hopes in which the statisticians with their charts do not acquiesce. If buying power is less as measured in terms of dollars, it is, they say, as great in terms of what a dollar will buy, and there remains only the hurdle of psychological reluctance to buy. This reluctance they rely on Santa Claus to overcome. In late September, Julian Goldman pointed out to an audience of economists and business journalists that if each U. S. family could be induced to spend $100 immediately, nearly $3,000,000,000 worth of commodities would be consumed. This, he said, would give industry sufficient acceleration to pull itself out of the slump. The more than $5,000,000,000 which Santa Claus, aided by Sophie Tucker, Tony Sarg, and a very competent corps of assistants, will pull out of pockets and bank accounts between this Friday and December 24 exceeds that demand magnificently.

Thus has come Santa's big chance. If he does the not impossible and turns the tide, the man who does not believe in him will nevermore be found.

from DOLLAR CLOCKS . . .



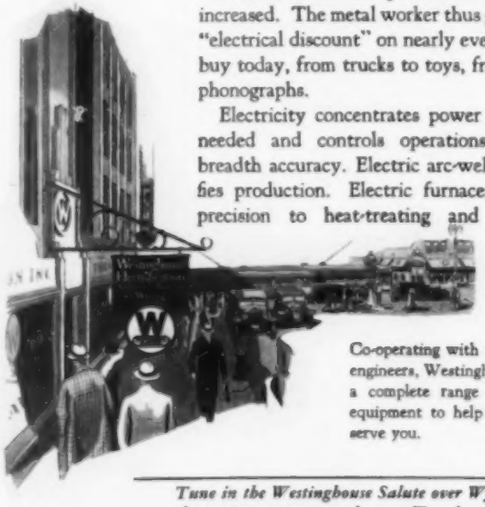
. . *to* MOTOR CARS

the Metal Worker gives you an Electrical Discount

Eagerly, merrily, in thousands of factories, strange-looking metal shapes tumble out of amazing machines. Into one end goes a raw piece of metal. Out of the other end come gears, bolts, brackets, base plates . . . or what you will. These mass-production machines, plus the electric motors that drive them, make it possible nowadays for moderate incomes to afford automobiles and radios, as well as the leisure to enjoy them.

Take these electrically driven machines off the production lines and in nearly every case the cost of the finished product would be vastly increased. The metal worker thus gives you an "electrical discount" on nearly everything you buy today, from trucks to toys, from pliers to phonographs.

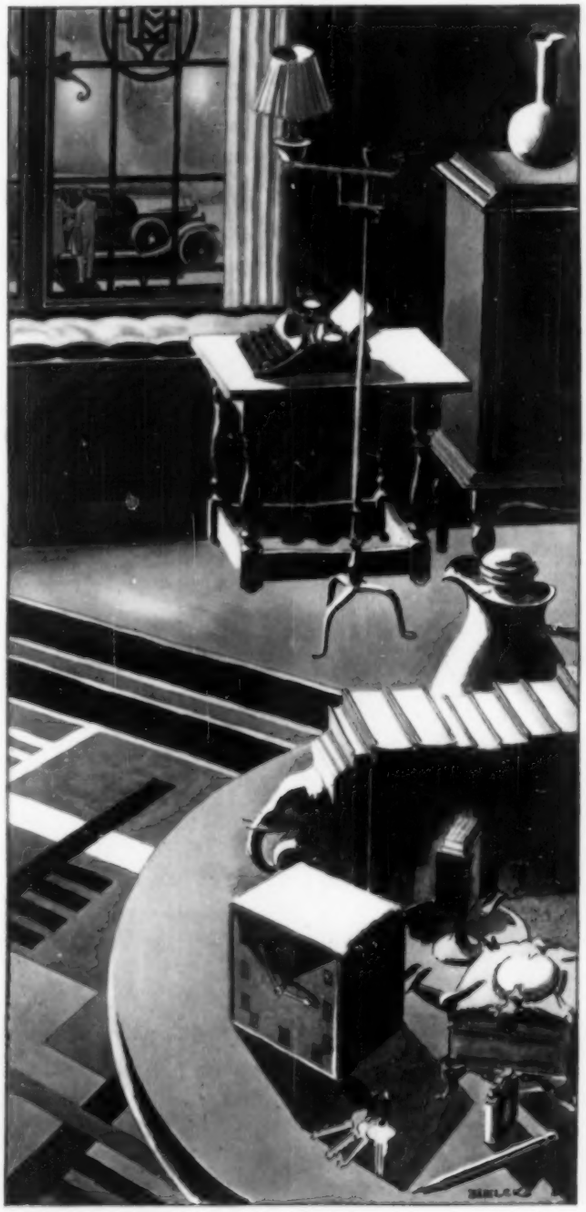
Electricity concentrates power where it is needed and controls operations to hair's-breadth accuracy. Electric arc-welding simplifies production. Electric furnaces lend new precision to heat-treating and tempering.



Co-operating with metal-working engineers, Westinghouse provides a complete range of electrical equipment to help the industry serve you.

Tune in the Westinghouse Salute over WJZ and the coast-to-coast network, every Tuesday evening.

Westinghouse



Windowless, Odorless, Noiseless, But Not Colorless

Is the industrial paradise which Simonds Saw is building.

THE Simonds Saw & Steel Company, of Fitchburg, Massachusetts, is ninety-eight years old. At this ripe old age, it is in the process of building one of the most revolutionary industrial plants of many years. The Austin Company, builders extraordinary of factories, designed the plant and will build it on the site of the old Boston & Maine car shops in Fitchburg. Austin engineers plotted and planned the whole thing in complete disregard of tradition, convention, and even experience. They set out to design an ideal factory regardless of what had been done before, to lay out a workshop in which the employees would work under optimum conditions as regards their five senses. So meticulously did they control working conditions inside the building that any intrusion of such variable natural factors as sunlight and fresh air would have upset the entire scheme of things. Hence they did away with all windows and prepared to manufacture their own light and air. "There won't be a pane of glass in the entire building," proudly declares Gifford K. Simonds, general manager of Simonds Saw. The one question to which the engineers paid any attention was: What would be the ideal conditions under which to work with machines? No windows is only one of their answers. Others, distributed among the four senses they affect, are:

Sight.—All machines will be orange-colored in order to lift their visibility and thus prevent accidents. Walls and ceiling will be blue, green, and white: blue to reflect ultra-violet rays, green as "the active or energizing component," and white to give an effect of light and cleanliness. Light will come from 1,000-watt lamps mounted eighteen feet above the floor line and spreading one sheet of light of uniform intensity (about three times that in most offices) over the entire building. Ultra-violet will be introduced into the light for its health-giving properties.

Touch.—"All that we require nature to do in the new plant," says General Manager Simonds, "is to furnish us the air. We'll make that air feel as ideal as on a spring day." A temperature and humidity control as elaborate as in any theatre will change the air every ten minutes, drawing in fresh air, washing it, and either warming or cooling it as the season requires. The worker will be fanned by a gentle current of fresh air, with all the drafts carefully eliminated.

Smell.—All fumes, gases, and exhausts are to be removed from the building by underground ducts.

Hearing.—Walls, ceiling, and floors are acoustical throughout. The walls, of acoustical cinder block, are expected to absorb at least 60 per cent of the usual sounds. The roof is made of various carefully planned layers of metal, rock fiber bound with asphalt, insulating board. The floor is made of acoustical wood blocks on a cement foundation. Among the machines any potential noise-makers will be insulated from the floor on cork pads. Workers at even the biggest machines will be able to make themselves heard without raising their voices.

Lest Simonds saw-makers, shut out from the sun during their entire working day, should turn into a species of human mole, their working hours have been thoughtfully arranged so that they may have half of the daylight hours outside the factory. There will be two shifts a day: one from 5 A.M. to 2 P.M. and one from 2 P.M. to 11 P.M. Still more gracious a gesture on the part of the company is the quality of the lavatories, which will be comparable to those in any theatre or skyscraper.

From all this bread cast upon the waters, the Simonds company expects to benefit in the shape of increased employee efficiency. Experiments have shown that the elimination of nerve strain, fatigue, and liability to accident which should result from the new plant may be expected to raise efficiency percentages by as much as 33 per cent. All such predictions, of course, must be pure hypotheses until the factory is in actual operation. Whatever the outcome, it is a remarkable experiment and one in which the Simonds company is sinking $1,500,000 as a kind of celebration of its approaching centennial.

The Austin Company

HERE SIMONDS WORKMEN WILL MAKE SAWS WITH GREAT SATISFACTION TO FOUR OF THEIR FIVE SENSES

"It's a General Electric!"

A GIFT OF BEAUTY, CONVENIENCE, USEFULNESS, ECONOMY—WHAT A GLORIOUS GIFT FOR A WOMAN TO RECEIVE. WHAT AN IDEAL GIFT FOR *YOU* TO GIVE AS AN EXPRESSION OF TRUE REGARD!

• • •

Picture her on Christmas morning—her delight and surprise—her unspeakable joy—when she finds it standing there—a gift of gleaming beauty, which through the days and months and years to come will give carefree and economical service—reminding her constantly of the gentle understanding and consideration which prompted the selection of such a gift.

Here is a Christmas gift she will treasure as much as those little personal things you will give her to adorn her beauty—for here is a gift that will adorn her *home* with beauty and give added happiness and joy to her entertaining. It can be delivered on Christmas morning.

GENERAL ELECTRIC
REFRIGERATOR

"SILENT · AS · THE · NIGHT · BEFORE · CHRISTMAS"

It May Not Be Safe to Predict, *but* —

"Do you know," asked the old gentleman, "that you are only just catching up with the public in this matter of aluminum?"

TWO men were motoring along a country road in Pennsylvania. A motor truck with an aluminum body flashed by them.

"That reminds me, do you know all about the new things that are being made from strong aluminum alloys?" asked the younger man.

"Yes, I keep pretty well posted," replied his elderly companion, one of the founders of the aluminum industry, now retired. Then he asked abruptly, "But do you know that you are only just catching up with the public in this matter of aluminum?"

The younger man looked incredulous. "Just catching up?" he demanded. "Why—"

"Fact," interrupted the other. "After young Charles Martin Hall had worked out his process of extracting aluminum from its ore by electricity, back in 1886, we started to make aluminum by the pound instead of by the ounce. Right away everybody began to predict big things for this new metal that was only about a third as heavy as iron or steel."

The public's fancy of aluminum skyscrapers may yet be realized.

"I remember," he continued reminiscently, "that people began to talk about aluminum trolley cars, aluminum bridges, aluminum frame work for skyscrapers, aluminum railroad coaches, and a lot of other things. We used to spend about half our time explaining why aluminum couldn't be used for such purposes. It wasn't merely because it was still too costly, but because the only kind of aluminum we knew anything about then wasn't strong enough for such heavy duty."

"Hard-Boiled" Aluminum Alloys

"And then," anticipated the younger man, "they worked out these 'hard-boiled' aluminum alloys."

"And then," repeated the other, nodding assent, "the research men worked out the aluminum strong alloys. I remember the development step by step, first the adding of small quantities of certain other metals to aluminum while it was still in a molten state, and afterwards the heat-treating of the alloyed metal to make it tough. It took a long time to complete the work, but when it was done, we had a metal as strong as structural steel—and still aluminum-light."

"Now," concluded the veteran with a quiet chuckle, "you're faced with the job of telling the public that it was right after all about aluminum trolley cars and aluminum railroad coaches—and it may yet prove to have been right about

aluminum framework for skyscrapers, and lift-bridges, and the like. It begins to look that way to me."

This is, indeed, the curious predicament of the aluminum industry today! No one could have foreseen, 25 or 30 years ago, that by the science of metallurgy aluminum would be made strong enough for building such things as armored trucks, railroad tank cars, motor bus bodies, trolley cars, and railroad coaches.

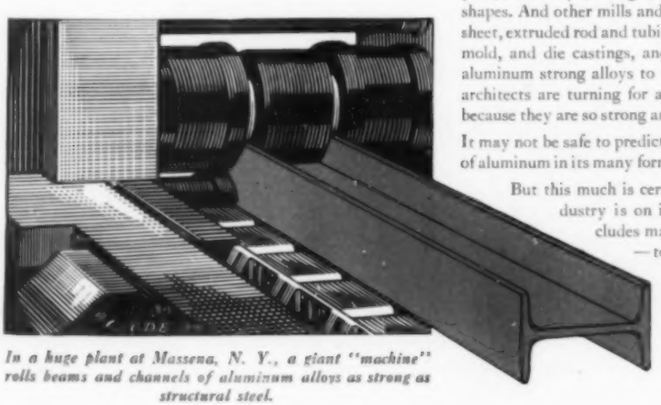
The Public Had Expected Miracles

Knowing nothing of the limitations of ordinary aluminum, the public had expected miracles—and the public was right, as it so often is in its expectations!

It was inevitable that the metallurgists should find a way to make this light metal more useful. And once the scientists had mastered the art of making aluminum strong alloys, it could be taken for granted that the engineers would make rapid progress in applying these "hard-boiled" aluminum alloys to the problems of transportation and building construction.

Trolley cars and railroad coaches with bodies made largely of aluminum strong alloys are in service today on numerous roads.

Motor buses and motor trucks, tank trucks and trailers, with aluminum strong alloy bodies, are now speeding along the country's highways.



In a huge plant at Massena, N. Y., a giant "machine" rolls beams and channels of aluminum alloys as strong as structural steel.

Truck cranes with booms made of strong aluminum alloys are being used in construction work, while shop cranes made entirely of strong aluminum alloys are helping manufacturers.

Railroads are beginning to experiment with strong aluminum alloys for locomotive connecting rods. Section cars made of aluminum are today speeding up and down railroad lines.

Architects are beginning seriously to discuss the use of aluminum strong alloys for many purposes in our skyscrapers. (Already aluminum is being used for radiators, shower partitions, doors, screens, fences, window frames, elevators and decorative forms on skyscrapers and public buildings.) And it is entirely possible that some day, as these great cloud-piercing structures go higher and higher, their upper framework of beams and girders may be of light strong aluminum alloys. We may, in fact, one day realize completely the public's rash early dreams about aluminum.

Aluminum trains and trolleys will soon be common in our cities.

Tees, Zees, and Beams of Aluminum

It was faith in the broader usefulness of aluminum and its own trade-marked metal, Alcoa Aluminum, which led Aluminum Company of America to build a great plant at Massena, New York, for making large structural shapes of aluminum strong alloys—I-beams, H-beams, angles, channels, Tees, and Zees. These are standard size shapes, up to ten inches in depth and eighty-five feet in length.

Already, though this plant has been completed less than a year, it is daily turning out large quantities of structural shapes. And other mills and foundries are producing rolled sheet, extruded rod and tubing, wire cable, sand, permanent mold, and die castings, and drop forgings in these same aluminum strong alloys to which American engineers and architects are turning for a great variety of new services because they are so strong and yet so light.

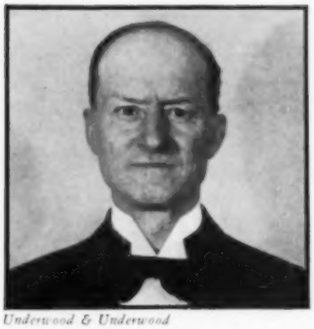
It may not be safe to predict, even yet, just how far the use of aluminum in its many forms will go in the future.

But this much is certain, the entire aluminum industry is on its toes—and the industry includes many companies besides our own—to meet the public's fullest expectations. The story of aluminum has only begun.

ALUMINUM COMPANY *of* AMERICA; 2402 Oliver Building, PITTSBURGH. PENNSYLVANIA.

Keystone

EUGENE MORGAN STEVENS, *born on February 1, 1871, in Preston, Minnesota; now of Chicago*



Underwood & Underwood

DR. JAMES ASTON, *born in 1876 in England; now of Pittsburgh, Pennsylvania*

HOWARD HUGHES, *born on December 24, 1904, in Houston, Texas; now of Hollywood*

© T. H. Hite

RICHARD REDWOOD DEUPREE, *born on May 7, 1885, in Norwood, Virginia; now of Cincinnati*

© International

MILTON DIAMOND, *born on August 12, 1889, in New York City; now of New York City*

Piric MacDonald

LESTER NORTH SELIG, *born on September 10, 1893, in Brooklyn, New York; now of Chicago*

International

ARTHUR DEHON LITTLE, *born on December 15, 1863, in Boston; now of Brookline, Massachusetts*

© Harris & Ewing

MICHAEL HARRISON CAHILL, *born on November 19, 1874, in Lexington, Ohio; now of New York City*

Career Milestones

¶ Eugene M. Stevens has changed his job four times. Each time he has left a job in which he was doing well to enter an entirely new field in which he correctly thought he could do better. First change came at the age of nineteen when he resigned as timekeeper for the Winona Wagon Company to go into F. H. Peavey & Co., at that time (1891) the largest grain merchants in the Northwest. Ten years later he gave up his job (he had become Mr. Peavey's right-hand man) to go into the bond business for himself. By 1918 he had become one of the leading investment bankers of Minneapolis, but he did not hesitate to come to Chicago and take a vice presidency of Illinois Trust & Savings Bank at the invitation of the late great John J. Mitchell. When his bank merged, Mr. Stevens became president of Continental Illinois Bank & Trust Co., now fifth largest bank in the country and the second largest outside New York City. His fourth change will be consummated next January; he will become chairman of the board of the Chicago Federal Reserve Bank, thus rounding out his career with a public office of the first importance.

¶ For many years metallurgists have been seeking a mechanical method of "puddling" wrought iron, i.e., evenly distributing throughout the iron those fibres of slag that make wrought iron rustless and noncorrosive. Ponderous revolving contraptions have been devised, but none of these gigantic cocktail mixers was efficient enough to displace the brawny iron puddler and his skillful hand manipulation. It remained for Dr. James Aston to solve the problem with a method as simple as most previous devices had been complicated. He conceived a Gargantuan bromoseltzer mixing in which a cup of molten iron is poured into a cup of molten slag. The iron, hotter than the slag bath, solidifies and drops to the bottom in a spongy mass well shot through with the essential quantity of slag. The inventor of this simple and novel technique is a member of the faculty of Carnegie Institute of Technology. His work was done under the auspices of the long-established A. M. Byers Co., which makes half the country's wrought iron pipe. So firmly does the Byers Co. believe in the Aston process that it has just completed a $12,000,000 plant in Pittsburgh to put it into big scale operation.

¶ After Howard Hughes, most spectacular of independent movie producers, had spent $4,000,000 on that amazing air spectacle, *Hell's Angels*, he found that his obviously slim chances of making any money on his picture would be rendered even slimmer by the cost of distributing it through United Artists. He has taken a characteristic way out of the situation by buying a large interest in United Artists itself, which not only eases his distribution costs but also makes him a partner in the company's production activities. His fortune comes from the tool business built up by his late father, especially a patented drill universally used in the oil industry. Though this tall young Texan has lavished money on his few productions, most important of which have been *The Racket* and *Two Arabian Knights*, he has so far managed to make money in the end. *Hell's Angels*, to make which required three years, eighty-seven airplanes, 2,254,750 feet of film, 35 cameramen, and 137 crack fliers, may mar his record.

¶ Colonel Procter, sixty-eight-year old head of Procter & Gamble, did not want to retire until he found a successor who would carry on his policies and expand the great soap-making business he had built up. His recent retirement from the presidency and the accession thereto of forty-five-year old Richard R. Deupree means that the Colonel has found his man. Mr. Deupree's rise to the presidency has been arduous, admirable, and undramatic. But this last is not quite true. There is one touch of drama. A portrait of Napoleon sits on his desk. "A fellow has got to have a plan of his life like Napoleon had," Mr. Deupree insists. Yet the curious fact is that Napoleon was a fatalist, a gambler who believed only in his star. With this erroneous idea of

[*Continued on page 108*]

SLOW DOWN LIVE LONGER

sound advice from a famous editor

ARTHUR BRISBANE, speaking editorially to business men, says: "Slow down. You do not lack warning. Your tired mind as you try to concentrate, your tired legs and back as you climb the stairs, your restlessness after eating, a thousand warnings tell you to SLOW DOWN."

Rest is what men need—*complete change of scene.* And this is what leading physicians are prescribing today for certain of their patients . . . rest in the form of sea travel. A winter cruise by *Red Star* or *White Star Line* is a marvelous tonic. It fills the lungs with bracing salt air—puts new luster in dull eyes—sharpens jaded appetites—gives men new zest for work—adds years to their span of life.

Do you feel rusty . . . played out? Let us tell you about our winter cruises—ideal for tired business men.

MEDITERRANEAN—Four de luxe 46-day Cruises by *White Star* liners ***Britannic*** (new) and ***Adriatic.*** Jan. 8 and 17, Feb. 26, Mar. 7. Holy Land, Egypt and other points of principal tourist interest. $695-$750 up, First Class—$420 Tourist Third Cabin, both including shore program.

SEVENTH ANNUAL WORLD CRUISE of the ***Belgenland.*** Still time to join this "Cruise of Cruises," sailing from New York, Dec. 15; San Diego, Dec. 31; Los Angeles, Jan. 2; San Francisco, Jan. 4. ***Red Star Line*** in cooperation with American Express Company. $1,750 up (133 days), including shore excursions.

30 Principal Offices in the United States and Canada. Main Office, No. 1 Broadway, New York City. Authorized agents everywhere.

WHITE STAR LINE • RED STAR LINE

INTERNATIONAL MERCANTILE MARINE COMPANY

Career Milestones

[*Continued from page 107*]

Napoleon as an inspiration, Deupree in 1905 went into Cincinnati's largest firm, Procter & Gamble, as a $10-a-week clerk. In six years he made himself manager of the chip soap department; by 1917 he was general sales manager. Mr. Deupree is a self-made man, and more than that. In him tenacity of purpose amounts nearly to genius. With only an intermediate school education to rely on (whence perhaps his misconception of Napoleon), with a rebellious stomach and a head that is visited by terrific headaches, he has managed to achieve his by no means modest goal. A characteristic story is told of him. The first time he went on one of Colonel Procter's famed duck-hunting trips, he scarcely bagged a single bird. He came back and earnestly took up trap-shooting. The next time he went hunting with the Colonel he did not miss.

¶ Most people have heard of Jeritza, Argentina, Galli-Curci, Zimbalist. Most people have not heard of Milton Diamond, under whose ægis from now on these and many another resplendent artist will perform. Mr. Diamond has been made czar of the concert industry. As president of Producing Music Managers Association, Inc., he leads a group of important managers who are said to control most of the country's concert bookings. To an interviewer he begins without preamble: "You certainly want to know my age. I'm forty." Mr. Diamond is no concert manager. He is a smart and extremely energetic lawyer whose first job was answering the telephone in the office of a Congressman Goldfogle. In 1910 he was admitted to the New York bar, an event of which he relates that he was among the 91 who passed out of 700 who took the examination and that he took forty minutes to answer a set of questions for which three hours were allowed.

¶ At the age of thirty-seven, Lester North Selig comes to the presidency of General American Tank Car Corporation—not exactly unexpectedly, for he is the brother-in-law of Max Epstein, who founded the business with five tank cars. Young Selig's predecessor as G.A.T.C. president was Elias Mayer, who retired with the remark that he wanted to die with his slippers, not his boots, on. As every shipping man knows, there are few more prosperous transportation agencies than G.A.T.C., whose 1930 earnings are expected to set a record of $9.00 a share. The operation of the company's fleet of 40,000 freight cars will be no novelty to Mr. Selig, who has been through every department of the business from riveting underframes to accounting.

¶ The Perkin Medal, awarded by five leading chemical societies for a lifetime of achievement in chemistry, is much coveted by all workers in the field. For 1931 it goes to Dr. Arthur Dehon Little, Bostonian chemist of parts who collects porcelains and writes for the *Atlantic* [FORTUNE, June, 1930]. An outstanding industrial chemist, he has done notable work in leather-tanning, wood pulp, petroleum, and artificial silk.

¶ There can be no question as to who is running the Missouri-Kansas-Texas (Katy) Railroad. Michael Harrison Cahill is the man. To the posts of chairman of the board and chairman of the executive committee which he already holds, he has added the presidency. Mr. Cahill's monopoly of the Katy's executive offices is all the more remarkable in that he only joined the road in 1928. Before that he was operating vice president of the Seaboard Air Line. Like Atterbury, Crowley, Loree, and many another major rail executive, Mr. Cahill has been a railroader all his life, from the time he got a job as clerk with the Baltimore & Ohio up to the present. His method of running a railroad is to "live on the line" as much as possible. The Seaboard brakemen and engineers liked tall, florid, genial "Mike" Cahill, who more than once dropped in on their parties and barbecues, there to indulge in a favorite diversion of his: dancing. Mr. Cahill announces that the Katy's preferred dividend for 1930 will be amply covered.

Even in periods of business depression certain Companies FORGE *AHEAD*

THE REPORT of a large New York bank on the net profits of 550 industrial corporations for the first half of 1930 shows an average drop of 30.4%.

However, all corporations in the same line of business are not faring equally. All are not down.

Occasionally you hear of a company that is faring better than average—rarely of one that is said to be AHEAD. What are the facts?

In our own experience the facts may be interesting:

Of our clients manufacturing or distributing food products, a comparison with 1929 reveals that 85% are AHEAD.

In the baking field, although the industry as a whole is reported 14.3% off, our clients are *all* AHEAD.

Our clients in the drug field are AHEAD from 8% to 38%. One which began advertising this year in a highly competitive line is 105% AHEAD.

Third-quarter reports for these companies continue to be impressively favorable, with indications that the last quarter will be no exception to the trend.

The figures reveal that of all clients whose sales positions are reasonably dependent upon advertising:

75% are AHEAD of 1929 positions
87.5% are AHEAD of 1928 positions

J. WALTER THOMPSON Company

NEW YORK CHICAGO ST. LOUIS BOSTON CINCINNATI SAN FRANCISCO LOS ANGELES
MONTREAL ✦ LONDON PARIS MADRID BERLIN STOCKHOLM COPENHAGEN
ANTWERP WARSAW ✦ ALEXANDRIA PORT ELIZABETH ✦ BUENOS AIRES SAO PAULO
BOMBAY ✦ MELBOURNE SYDNEY ✦ BATAVIA ✦ WELLINGTON

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Empire State Building 53 Sep
Engineers Public Service Co. 91 Nov
Field, Glore & Co. 104 May
Firestone Tire & Rubber Co. 78 Sep
Forty Wall Street building 72 Aug
Fauke Fur Co., and sealskin 72 Nov
Fox Film Co. 48 May
Freeport Texas Co. 80 Oct
General Mills, and flour 81 Nov
General Motors, its executives 64 Apr
Gillette Safety Razor Co. 112 Apr
Gimbel Bros., and Macy's 82 May
Goodrich, B. F. Company 100 Sep
Goodyear Rubber Co. 78 Sep
Great Atlantic & Pacific Tea Co. 41 Jly
Grigsby, Grunow 109 Apr
Harris, Forbes & Co. 76 Aug
Hawaiian Pineapple Co. 33 Nov
Horse Association of America 135 Sep
I. G. Farbenindustrie, and nitrate 61 Oct
International Paper Co. 65 May
International Salt Co. 52 Aug
International Telephone & Telegraph Co. 37 Dec
Kuhn, Loeb & Co. 89 Mar
Liggett Drug Stores 42 Oct
Marshall Field & Co. 104 May
Macy, R. H. & Co. 82 May
Metro-Goldwyn-Mayer and color movies 34 Oct
Morton Salt Co. 52 Aug
National Broadcasting Co. 64 Dec
National Cash Register Co. 67 Aug
National City Bank, and Gordon Rentschler 73 Nov
Oliver Chilled Plow Works 52 Mar
Owens-Illinois Glass Co. 71 Feb
Parke, Davis & Co. 69 Sep
Pennsylvania Railroad, electrification 46 May
Pullman Co. 64 Jly
Radio Corporation of America 82 Feb
Rexall Drug Stores 42 Oct
Shreve, Lamb & Harmon 58 Sep
Simmons Bed Co. 55 Nov
Smith, A. O., Corp. 62 Nov
South Bend Bait Co. 108 Mar
Spalding, A. G., & Bros. 62 Aug
Squibb, E. R., & Sons 69 Sep
Standard Oil Co. of New Jersey, merger 94 Sep
Standard Oil Co. of New York, merger 94 Sep
Sterling Products, Inc. 42 Oct
Stone & Webster 91 Nov
Studebaker Corp. 57 Mar
Swedish Match Co. 50 Jly
Swift & Co. 55 Feb
Texas Gulf Sulphur Co. 80 Oct
Turk-Sib Railroad, picture map 44 Aug
United Corp., and utilities 77 Jly
United Drug Co. 42 Oct
U. S. Rubber Co. 102 Sep
Utah Copper Co. 71 Apr
Vacuum Oil Co., and merger 94 Sep
Warner Bros., and color movies 127 Oct
Western Electric Co., and A. T. & T. 38 Sep

Subscribers may obtain a complete index on request.

NO!

NO MORE DELIVERIES UNTIL NEXT FALL!

Suppose Fire put your factory out of business for a year — beginning tomorrow. Would your customers shut up shop and wait for you to get running again? You know they wouldn't. They'd *have* to buy from your competitors. Competitors' salesmen, getting a foothold in your pet sales territory—that's what it would mean.

Fire insurance will restore your destroyed property. But it won't produce goods and it won't prevent your salesmen from going to competitors —and taking with them the good will of their respective territories.

When fire touches business its destruction is far reaching. You should think beyond the mere loss of your physical property — to the possible loss of your business itself. There is ample protection against this. Find out about it.

Just reach for the nearest 'phone and call the Hartford agent*. He'll show you how Business Interruption Insurance can step in and produce business income — while your property is being rebuilt.

Is there anything more important you could think of to do—right now?

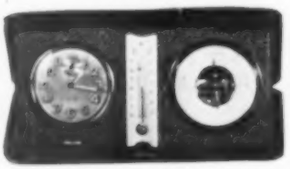
THE
HARTFORD FIRE INSURANCE CO.
AND THE
HARTFORD ACCIDENT AND INDEMNITY COMPANY

WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

*If you do not know the name of the Hartford agent look under "Hartford" in your telephone book. If he isn't listed write the Hartford Fire Insurance Company, Hartford, Connecticut.

CHRISTMAS SUGGESTIONS

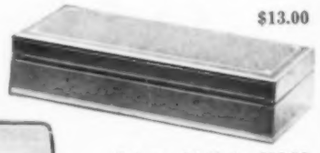
$25.00 to $65.00



$35.00

ESTABLISHED 1818

$26.00



$13.00

$25.00

Others $5.00 to $40.00

Others $4.50 to $92.00

$29.00
Others
$23.00 to $110.00

Brooks Brothers,

CLOTHING,

Gentlemen's Furnishing Goods,

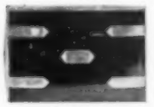
MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK

$24.00
Others $14.00 to $45.00
Pipes, singly
$5.00 to $20.00

$25.00 to $28.00
Others $9.50 to $28.00

$275.00, Others $350.00 & $385.00

$16.00
Others $16.00 to $210.00



$50.00
Others $1.75 to $58.00

$52.00
Others $4.00 to $52.00

$10.00 to $37.00

$250.00
Others $115.00 to $525.00

$83.00
Others $30.00 to $127.00

$65.00
Others
$18.00 to $122.00

$55.00, Others $20.00 to $150.00

$50.00
Others
$25.00 to $72.00

BRANCH STORES
BOSTON
NEWBURY CORNER OF BERKELEY STREET
NEWPORT **PALM BEACH**

Radio Advertising

[*Continued from page 69*]

spite of the fact that the Davey company, in emphatically a luxury field, anticipated as much as a 25 per cent decrease in present depressed times. What presumably happened was that people who were interested in trees liked to hear Mr. Davey talk about them, and people who were not interested in trees were no use to Mr. Davey anyhow. In other words, Mr. Davey got into his program a *selectivity* very unusual in radio and opening up a fertile possibility for other advertisers with the same selective appeal.

There remain two classes of advertisers who will find radio broadcasting particularly difficult. In the first place, there is the advertiser whose product almost inevitably requires a long, straight, reason-why selling argument. The Hudson Motor Car Company, for example, believes it should "not only detail the many refinements and intrinsic quality of their products, but also show just how it is possible to build this quality and sell it at the price," and that "the company could not get its story across without infringing on the entertainment purchasers of radio are entitled to expect." A somewhat different aspect of the same limitation is found in the manufacturer who does not deal directly with the public and with whom price is an extremely vital factor. The Crane Co. (plumbing) argues that "between the public and ourselves is the plumbing and heating contractor," and that "all of the radio advertising in the world is not going to convince him that he should buy Crane products when he can save a ten-cent piece by buying another manufacturer's line." The manufacturer who must tell a detailed story or the manufacturer who makes little direct consumer contact is the manufacturer who will find in radio its greatest waste and its least result.

* * *

After all, radio advertising is advertising, and the advertiser who talks weekly to several million people must be extremely inept if he cannot leave them well disposed toward his company and its products. Criticism of broadcast advertising is properly based not so much on scepticism as to what happens after the broadcaster has located his audience as on the difficulty of locating such an audience as the radio enthusiast so glibly visualizes. Furthermore, as far as the national network advertiser is concerned, it is becoming constantly more difficult to secure a satisfactory hour, particularly since the network operators themselves own only a few of their stations and have to make individual arrangements with all the others. Indeed, without discounting the services that National Broadcasting and Columbia have performed and are performing, it is fair to say that radio has grown to a position in which another chain is definitely required. Furthermore (in spite of the universal tendency to think of radio in terms of the two networks just mentioned), the looked for third chain is already developing in the form of the electrically transcribed broadcast and the advertiser's resulting opportunity to create his individual chain for his individual purposes.

The program broadcast via discs (i. e., records) has been until recently in ill repute, partly because of its association with early broadcasting days in which studios broadcast ordinary phonograph records and partly because many of the companies now engaged in electrical broadcasting are unreliable and unsatisfactory. The transcribed program is prepared and performed in exactly the same way as the direct program except that instead of being put immediately on the air it is first recorded on a disc, is then sent to the broadcasting station and is then released. It reproduces exactly like a talking picture, and (as with the talking picture) the outstanding manufacturer of its apparatus is the Western Electric Company. Now since the directly-broadcast program also goes out on the air in the form of an electrical impulse and is electrically received, there is theoretically no difference between the recorded program and the direct program, and the listener is altogether unable to distinguish between them. This theoretical identification is never quite realized (there is, for instance, the item of the surface noise of the record), and very often is so far from being realized that the results are extremely inadequate. On the other hand, however, such an exponent of the transcribed broadcast as Sound Studios of New York, Inc., and its associated World Broadcasting System have brought the recorded program to a very high level of excellence. Sound Studios (the only Western Electric licensee in its field) is handling the Chevrolet program, by far the most extensive program on the air. And the listener who should decry the Chevrolet broadcast as a recorded program is listening not so much with his ears as with his prejudices. The transcribed program, when properly made and properly broadcast, is an answer to many of the radio advertisers most serious problems.

For the disc program can be sent to any number of stations and can be broadcast at the best time available on each. It enables the advertiser to reach exactly the territory he wishes to cover. It permits him to select as many as he wishes of the country's 611 radio stations (except the few owned by networks and hence prohibiting discs and the ever increasing number which lack facilities for broadcasting electrical transcriptions), whether, like Chevrolet, he wishes a wider coverage than the networks can give him or whether, like the Nunnally candy company (operating chiefly in the South), he is interested in a regional distribution not centering in the northeast. The advertiser can also secure much better radio time. If he wants 9 P.M., he can take Monday on one station, Tuesday on a second, Wednesday on a third, and so forth, whereas with the direct program he must take the best time that the network can arrange simultaneously with all its stations. In short, he has a control of his broadcast possible through no other method.

Thus radio advances and develops. The forthcoming government census should make it possible for every radio advertiser to know exactly how many sets are in the territory he is covering. Meanwhile N. B. C. engineers, also not idle, are working on a wave length synchronization which may yet make it possible for several stations to use the same wave length at the same time. It is true that the radio advertiser may never know how many people are listening to his programs and buying his goods. But with how much more authority can he answer the same questions regarding that portion of his advertising which appears upon the printed page?

Tuesday, November 4, 1930

	WEAF	WABC
6:00	*Black and Gold Room Orchestra	*Harry Tucker and his Barclay Orchestra
6:30	*Who's Behind the Name?	*Crockett Mountaineers
6:45	*Black and Gold Room Orchestra	*Tony's Scrap Book
7:00	Air Scoops with Elinor Smith (Daggett & Ramsdell Co.)	*Columbia Educational Features
7:15	*Laws that Safeguard Society	Westchester County Salon Orchestra (Westchester Realty Board)
7:30	Soconyland Sketches (Standard Oil Co. of New York)	Wise Shoe Program (Wise Shoes, Inc.)
7:45		*The Early Book Worm—(Alexander Woolcott)
8:00	*Troika Bells	Blackstone Program (Waitt & Bond, Inc.)
8:15	*Snoop & Peep	
8:30	Florsheim Frolic (Florsheim Shoe Co.)	Kaltenborn Edits the News (S. W. Straus & Co.)
8:45		Premier Salad Dressers (Francis H. Leggett & Co.)
9:00	Eveready Program (National Carbon Co., Inc.)	Henry and George (Consolidated Cigar Co.)
9:30	Happy Wonder Bakers (Continental Baking Corp.)	Philco Symphony Concert (Philadelphia Storage Battery Co.)
10:00	Enna Jettick Songbird (Dunn & McCarthy Co.)	Graybar's Mr. and Mrs. (Graybar Electric Co.)
10:15	B. A. Rolfe and his Lucky Strike Dance Orchestra (American Tobacco Co.)	Paramount-Publix Radio Playhouse (Paramount-Publix Corp.)
11:00	*Mystery House	*Will Osborne and his Orchestra
11:15		*Columbia's Radio Column
11:30	*Vincent Lopez and his Hotel St. Regis Orchestra	*Mickey Alpert and his Orchestra from Boston
12:00	*Duke Ellington and his Cotton Club Orchestra	*Asbury Park Casino Orchestra
12:30	Jack Albin and his Hotel Pennsylvania Orchestra	*Nocturne—Ann Leaf at the Organ

**Sustaining program*

this wonderful
tonic bath
for the skin

after shaving
after bathing
after exercise

Splash a few sparkling drops on your face . . . and watch fatigue-lines vanish, feel new life come tingling back . . . Give your whole body a 30-second rubdown . . . and note how cramped muscles relax, how all your skin is smooth as cool silk . . . Shaving lotion, body freshener, toilet water—all in one: Pinaud's Lilac . . . The delicately pungent freshness of French lilacs—the tonic stimulus of essences imported from Pinaud's own Paris laboratories—this famous formula is one of the most luxurious toilet essentials in the world. Enjoy it today! Pinaud, Paris—New York.

National Broadcasting Company, Inc.

[*Continued from page 70*]

radio entertainment. There is an obvious connection between broadcasting and the sale of radio sets. And there is an equally obvious value in the public service aspect of N. B. C. as a counterbalance to Radio Corporation's preferred position in radio. Nearly all the radios manufactured in the U. S. are manufactured under patents controlled by Radio Corporation, and many and bitter are the opponents of the patent pooling which Radio Corporation undoubtedly represents. And N. B. C. is Radio Corporation's best answer to the monopoly indictment, which is one reason why N. B. C. converses so fluently on the radio art and especially on itself as performing an unselfish service of cultural value.

But the personnel of N. B. C. is largely a personnel of radio enthusiasts who were radio enthusiasts in radio's pre-commercial days. Mr. O. B. Hanson, manager of Plant Operation and Engineering, became interested in radio at the time of the *Titanic* disaster (1912), was radio operator on the *S. S. Stephano* when it was torpedoed in 1916, went with WEAF in its Telephone days (1922), and has been chief N. B. C. technician since the formation of the company. Miss Katherine Seymour, dean of N. B. C. continuity writers, graduated from Barnard, taught school, got a job with the Telephone Company, and was sent down to WEAF because no telephone position was open. Here she was hostess, pianist, clerk, announcer, graduated into continuity writing after working under the late Roosevelt Clark, usually considered Father of Continuity. On the announcing side, there is Mr. Milton Cross, who entered radio via choir singing, and Mr. Graham McNamee, who, during a recess of a jury on which he was serving, strolled casually into WEAF to see what radio was all about. Even among radio performers and notwithstanding the flood of outside talent which arrived after radio had established itself, N. B. C. is most proud of such performers as Jessica Dragonette, who deserted the musical comedy field after having sung the leading feminine rôles in the *Student Prince* and the *Grand Street Follies*, or Vaughn de Leath, original radio contralto, who invented the crooning technique because she began broadcasting in the days when radio tubes, which cost $110, were likely to be shattered by a full, high, soprano note.

Courtesy N. B. C.

MISS KATHERINE SEYMOUR

Given such a background, it is almost inevitable that N. B. C. should have acquired a possessive air concerning radio. Indeed, criticism of N. B. C. turns not so much upon its feeling that it knows a great deal about radio, but upon its apparently feeling that nobody else knows much of anything about it. Its attitude toward the advertising aspect of radio has been already discussed, and however well justified its hostility toward sales talks in programs may be, no excuse exists for its tendency to overestimate the number of radios reached on its networks. Furthermore, although N. B. C.'s absolute prohibition of recorded programs on all stations it owns is explained on the basis that recorded programs are bad for the radio art, it is difficult to escape the impression that the objection to the records is more competitive than esthetic. N. B. C. is sincerely devoted to radio, provided radio is always thought of as bearing an N. B. C. label.

Nor does N. B. C. regard radio as merely "another musical instrument." Quoting M. H. Aylesworth, N. B. C. president, in his report for 1929: "I am impatient for the time when realization of the cultural importance of network broadcasting will cause our authors and composers to create new art forms suited to the audience it provides . . . Thus

THE BANK DISCOVERS A POWERFUL BUILDER OF GOOD-WILL

• NO LONGER are bank executives cold, aloof figures, guarded by closed doors and supercilious secretaries. Their desks, today, are in plain sight, accessible to all. • In line with this new policy, another instrument for the building of good-will has emerged. To each depositor of certain progressive banks there comes, once or twice a year, a letter from the office of the President. It is typewritten, and personally signed by the head of the bank. It outlines a service, states a policy, establishes a sense of close relationship and confidence. • To be successful, such letters must be genuine in every sense. It is significant that in many cases the background given them is the clean, crisp integrity of Coupon Bond—recognizable at a glance, at a touch, as worthy of respect. • It is chosen for the same qualities that have made it the executive stationery of business leaders throughout America. • Coupon Bond is a supreme achievement in paper making. It is manufactured, 100 per cent, from strong, new rags. And its Eagle-A watermark is a nationally accepted symbol of excellence. • Our portfolio, "The Modern Trend in Letterheads," and a new booklet, "The Executive Letter," will be sent you on request. (In writing for them, please use your business stationery.) ¶ *Coupon Bond is but one paper in the Eagle-A Line of Bonds, Ledgers, Writings, Index Bristols, Offsets, Covers, Book Papers, Mimeograph and Manifold Papers—the* right *paper for every business purpose.*

AMERICAN WRITING PAPER COMPANY, INCORPORATED
HOLYOKE, MASSACHUSETTS

EAGLE·A·PAPERS

Come up with the tide!

WEIGH the anchors that hold your ship outside the harbor. The tide is flowing in.

If there is work yet to be done in realigning your productive facilities, summon the Engineer so that he can speed up whatever is necessary in building, in mechanical reorganization, in power requirements or in other fields where his counsel and work can help you make more profit, better product or the same product for less.

Textile Mills
Reorganizations
Warehouses
Surveys
Rayon Plants
Tobacco Factories
Steam Plants
Examinations
Water Supplies
General Industrial Plants
Production Studies
Hydro-Electric Systems
Appraisals
Sanitary Engineering
Power Application & Lighting

J. E. SIRRINE & COMPANY
Engineers
Greenville South Carolina

far we have created very little art designed primarily for the microphone . . . We have borrowed, and will continue to borrow, dramatic writings originally designed for the legitimate stage. But we must do more toward the creation of a dramatic literature of our own."

There may be such a thing as a generic radio drama. Thus far, however, the spoken radio word has been notably inferior to the musical portion of air entertainment, and the sponsors of the most extensive network programs have usually (and wisely) directed their program efforts toward getting bigger and better brass bands. N. B. C. seems inclined to labor under the delusion that people do nothing but sit cowlike by their radio sets. Advertisers know better and proceed to make programs to which people listen, art or no art.

One of the few members of the N. B. C. organization who derives neither from wireless nor from entertainment is its president, Merlin Hall Aylesworth. Mr. Aylesworth was born in Cedar Rapids, Iowa, and has celebrated his forty-fourth birthday. When he was only a year old, his parents moved to Colorado, where he grew up, graduated from the University of Denver, and practiced law in Fort Collins, Colorado. He next made the easy transition from law to politics, and from 1914 to 1918 was chairman of the Colorado Public Utilities Commission. He then shifted to the corporate side of the utility question, becoming head of the Utah Power & Light Co. Then, in 1919, he was appointed managing director of the National Electric Light Association, national headquarters for publicity from light and power sources. When (on November 15, 1926) National Broadcasting Company was organized, Mr. Aylesworth's experience with public relations plus his utility connections made him evidently qualified for the presidency of the new organization. Outstanding characteristic of Mr. Aylesworth is a quick-minded diplomacy which enables him to talk to everyone, say exactly what everyone likes to hear, and yet come away with his points well made and his ends well served. He is primarily N. B. C.'s congressman-at-large, its representative to the press, the public, and the politician. He does a great deal of traveling, makes many, many speeches, and is the most conspicuous exponent of radio's art and radio's cultural values. For these are the keynotes of the official radio story, and Mr. Aylesworth is radio's extremely conspicuous face.

One thing that Mr. Aylesworth has not done (or has not admitted doing) is make money. N. B. C. does not publish a detailed financial report, but does describe itself as a service organization not interested in profit. In 1929 it sold $11,000,000 worth of time. It received $2,500,000 for the sale of talent for broadcasting, $600,000 out of the sale of orchestras for broadcasting, and $750,000 for the sale of talent for purposes other than broadcasting. Its total income was therefore approximately $15,000,000. But 95 per cent of radio time is sold through agencies which collect a 15 per cent commission, and radio talent is sold through N. B. C. Artists Service, which collects an artist's service fee equivalent to 10 per cent. The American Telephone & Telegraph Company collected about $2,000,000 in 1929 for the use of telephone lines, and sustaining programs (non-sponsored and amounting to about two-thirds of all programs) cost $1,200,000. There are 1,200 employees to pay and six stations to maintain, and a multitude of miscellaneous expenses such as a yearly bill of $8,000 for tuning pianos. Thus N. B. C. reports that it expects to make no money, that it would put any profit that might be made back into the improvement of broadcasting, and that its Radio Corporation owner is satisfied with it as a creator and a guardian of radio popularity. Meanwhile, critics argue that N. B. C. would at least very much like to make money and that only the prevailing depression has kept it from a radical upward revision of its rates for radio time.

There are, therefore, two points of view on N. B. C. It may be regarded as altogether public-spirited, unselfish, and devoted to the best interests of radio. It has, on the other hand, been accused of feeling itself as all-powerful in the broadcasting field and even of being "drunk with power." It does rather overstress its altruistic aspects, although that is a failing common to all public utilities. And it is, humanly enough, unable to realize that the radio child which it has so well taken care of has now grown to a point at which even its parent cannot continue to exercise an undisputed authority, an unrestricted control.

BUILDING FOR THE FUTURE of INDUSTRY

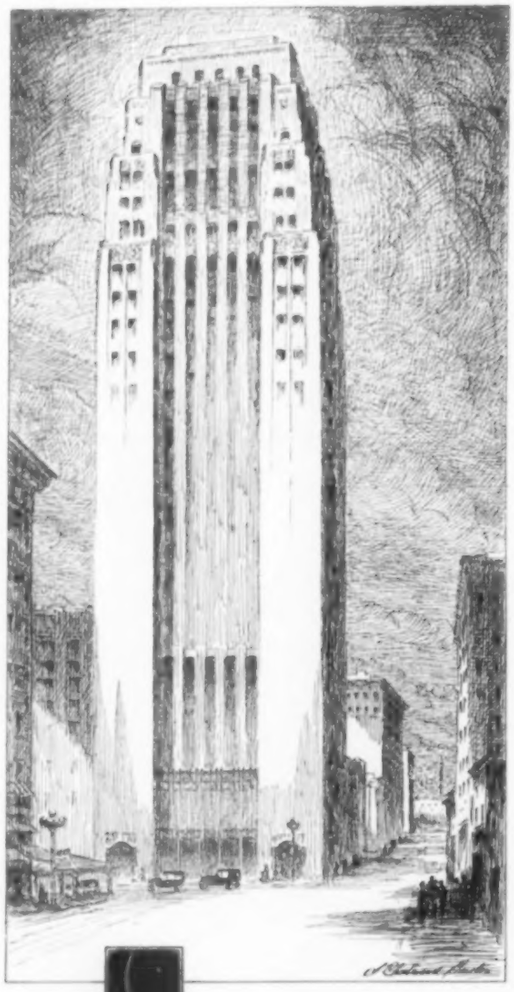
Lever Brothers Company has selected Stone & Webster Engineering Corporation four times to construct major developments. Most recent of these is the new plant at Hammond, Indiana, built from designs of Chas. T. Main, Inc.

Our flexible service is immediately available for any problem in modern building and engineering. We work from the plans of others as in this instance, or we will design and build the entire project.

STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INCORPORATED

BUILDERS and ENGINEERS *For the* BUSINESS LEADERS of AMERICA



WHEN your Northwest resident manager selects an office in The Rand Tower, Minneapolis, he gains distinct advantages . . . well designed floor space, a location in the center of the Northwest's business capital, and an address of recognized value. These advantages he will translate into greater efficiency—time saving and increased productiveness.

THE **RAND TOWER** MINNEAPOLIS

The Rand Holding Company, a unit of the Rand Companies

I. T. & T. Ends a Brilliant Decade

[*Continued from page 43*]

in the trade papers and stirs its agents to special efforts. The florists have responded with about $100,000 additional business this year, turning a 70-30 advantage for Western Union into a 60-40 lead for Postal. This is smart merchandising, and it is being carried into the most unexpected corners of industry. Postal is trying to convince companies with large sales forces (such as Fuller Brush) to have their men in the field report each night by telegram. National advertising by telegram is another Postal goal. A move which Western Union *had* to copy was the Postal hook-up with the Standard Oil group, establishing 3,500 telegraph offices in as many gas service stations scattered through the marketing territories of the S. O. companies (New Jersey, Ohio, Kansas, California, Indiana, etc.), which can be expanded to cover the total 70,000 stations of these companies. This was no sudden, happy inspiration; it proceeded directly from the chief thesis behind all recent Postal activity, i.e., that the telegraph should be made available to the public, as available and as familiar as the telephone. Latest Postal move is the metamorphosis of its New York offices into Theatre Ticket agencies, a move which has its difficulties, but will certainly increase Postal traffic.

• • •

Hurdles in the path of this scheme are many. One is the psychological barrier erected by the ten-word limit. The Chicago executive who thinks nothing of lifting his telephone speaker and calling San Francisco yet tries to keep his telegrams within the fateful ten words. Rate schedules are now being very carefully studied, and the ten-word taboo may disappear as completely as Spain's thirty-minute limit.

But the most serious hurdle and the problem which is at the heart of the domestic telegraph situation is the competition between Postal and Western Union. It is permissible to debate the merits of the competitive *development* of the telegraph as against the monopolistic development of the telephones, but the inefficiency of that competition today is obvious to everyone—even to the principal cause of its continued existence, Mr. Newcomb Carlton. Postal's regeneration has already brought it from a 17 per cent company to a 19 per cent company, and the high state of its 1930 vigor has kept its depression loss down to 6 per cent of 1929 business, while Western Union is off 9 per cent. Gratifying as this is, both as record and as portent, yet the fact remains that a 6 per cent decline wipes out the margin of Postal's revenue available for dividends on the common stock.

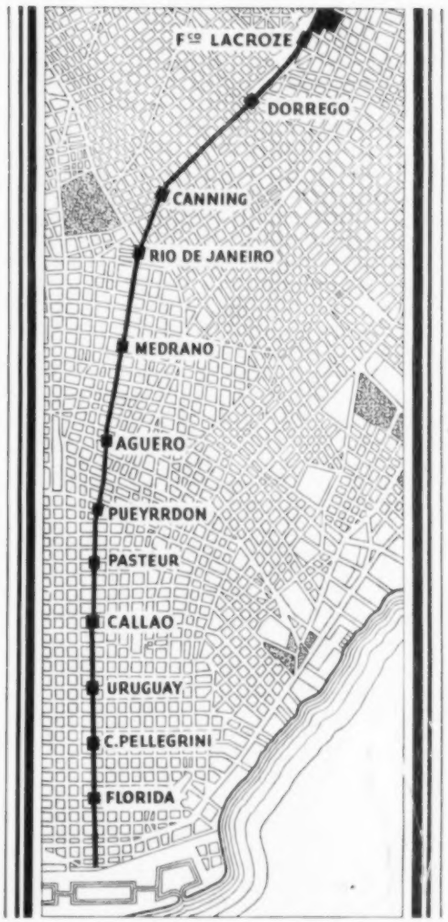
Duplication between the two systems already costs millions and in prospect costs tens of millions. Example of current waste: a duplicate rent bill of $1,000,000 a year in New York City alone. Example of prospective waste: the $70,000,000 printer exchange. Every telegraph man agrees that there should be and will be a printer exchange. It will mean that these long-distance typewriters, which now connect your Cleveland (or Boston) office with your Detroit (or New Orleans) office and also link your office with the company's telegraph and cable dispatching offices, will be interconnected with each other all across the country and, eventually, through Europe and South America as well. Thus the exchange will plug you in to your advertising agency, to your bank and your lawyer and your customers and the sources of your raw materials and your friends in Europe and coffee headquarters in Santos. A typist will pound out your orders, your directions, your questions, and the record will be both in your files and in the files of the office at the other end of the wire. As will be the records of that office's acknowledgments and answers.

Such an installation will cost somewhere around $70,000,000, which is a sizable investment. Neither Postal nor Western Union is willing to make it. For when one starts, the other must follow or go out of business, and the absurdity of having *two* printer exchanges could be matched only by the absurdity of having *two* U. S. mail systems, one of which included Minneapolis and Camden, the other St. Paul and Philadelphia. So, faced with the dilemma, the companies make plans on paper and content themselves by feverishly installing free printers to connect with

First modern subway

in South America

built in 21 months



Five-mile, double-track system at Buenos Aires built and financed by American companies

THE new Lacroze Subway at Buenos Aires—the first modern high-speed system in South America — was placed in operation October 18th by the Ferrocarril Terminal Central de Buenos Aires.

American bankers financed the project; American engineers designed, built and equipped it—complete and ready to operate.

Construction, involving both open cut and tunnel work, was completed in 21 months—a speed record for large undertakings anywhere. Three thousand men were employed, with 32 different languages represented—an indication of the administration problem.

Through our organizations in Buenos Aires and Rio de Janeiro we are prepared to execute engineering and construction assignments of any character in any part of South America.

Our services are equally available for work anywhere in this country, Canada and Europe — industrial plants, steam and hydro-electric power developments, transportation systems, monumental buildings.

UNITED ENGINEERS & CONSTRUCTORS, INC.
combining
Day & Zimmermann Engineering & Construction Co.
Dwight P. Robinson & Co., Inc.
The U. G. I. Contracting Co.
Public Service Production Co.
United Engineers & Constructors (Canada) Ltd.
Dwight P. Robinson & Company of Argentina, Inc.
Dwight P. Robinson & Company of Brazil, Inc.

Design and Construct
INDUSTRIAL PLANTS
STEAM POWER STATIONS
HYDRO-ELECTRIC DEVELOPMENTS
RAILROAD WORK
GAS PLANTS

Build
APARTMENTS
HOTELS
OFFICE & MONUMENTAL BUILDINGS

UNITED ENGINEERS & CONSTRUCTORS

INCORPORATED

DWIGHT P. ROBINSON, PRESIDENT

PHILADELPHIA · NEW YORK · NEWARK · CHICAGO
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MAXIMUM RETURN TO CLIENTS PER DOLLAR INVESTED

their own offices. Thus an enterprising New York office could today get itself six printers, from Western Union, Postal, RCA, and A. T. & T. Costs of installation to the four companies would total $3,000, but for only one (the A. T. & T. intra-office printer) need the customer pay a cent.

Emphasis is here laid upon the telegraph rather than the cable systems, for the underwater competitive situation is complicated by the real threat of Britain's Cable & Wireless combination. In the telegraph field, competition has become ruinously expensive and a real barrier to progress. Mr. Carlton, whose feeling toward Western Union is distinctly patriarchal in character, has greeted all talk of consolidation with bluff, abrupt opposition. This, and not the restraining White Act, is the real reason why a single U. S. telegraph and cable system is not nearer realization today. "Not," observes Mr. Carlton, "till I die."

Mr. Carlton is only sixty-one, and a very hearty gentleman indeed. In the meantime, the new and aggressive Postal is cutting into his business and his prestige. With the return of normal activity, Postal will begin to make money again and pull a vigorous oar for the I. T. & T. boat.

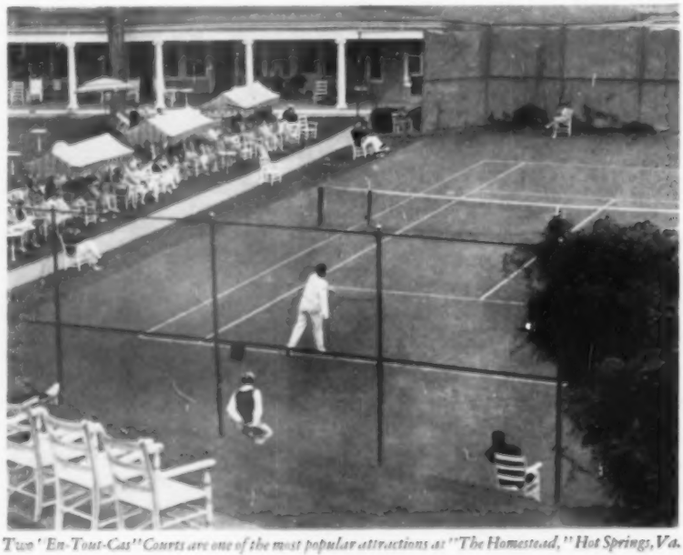
• • •

Looking at Spain and observing the success of that large telephonic enterprise, noting the rejuvenation of Postal, it is apparent that the glitter of I. T. & T.'s record is by no means all on the surface. The Behns have not only eaten largely and very rapidly; they are also digesting their food. Clear evidence of digestion is to be found in Spain, in Postal, and in the factories of International Standard Electric. I. T. & T., which became a manufacturer almost by accident, now owes the bulk of its revenues to this aspect of its world plan. Sales of $32,500,000 in 1925, when the Behns bought International Western (later Standard) Electric, in 1930 will climb above $70,000,000. And nearly half this increase has come from internal development, not from the mere purchase of going businesses.

Now this is not to say that I. T. & T.'s rate of growth has been ideal. Manifestly 1930 would have been an easier year if expansion could have been financed out of earnings. But the hammer-like strokes with which the Behns made the decade ring were not the results of either intoxication or whim. When a San Franciscan sets out to buy a country place, he may pick Burlingame, and then if he can't make a good deal in Burlingame, he may wander on to Menlo Park. But telephone systems are not often on the market, and if the Behns hadn't bought the United River Plate Company in 1928 they might never have had it. And they needed it. Not for their 1930 income account, to be sure, but to fill in the outline of their broad plans.

For the Behns have just started. They have a vision of world communications which many decades can scarcely realize. It may be outlined:

First of all, a unified modern South American telephone system. At the end of 1928, when the River Plate Company was bought, telephone development south of the U. S. border roughly paralleled U. S. conditions in 1895. There was less than one telephone for each 100 inhabitants, against the present U. S. quota of seventeen. Only a few months earlier, I. T. & T. had strung its highest-in-the-world telephone wires across the Andes to introduce Chile to the Argentine. Never, before 1928, had one South American capital spoken with another. The influence which modern telephone communication could have on internal trade is obvious and tremendous. Equally tremendous the I. T. & T. opportunity. Hence the Behn entrance into the A. B. C. countries; hence also their entrance into Peru and Uruguay. One large network, serving Rio and Sao Paolo, is linked with the local traction company, is owned by Canadians, and is not likely to join the I. T. & T. group. But some 55 per cent of South American telephones have already been brought into the system, and I. T. & T. is working at top speed to make this polyglot collection as efficient a communication unit as the new, compact network in



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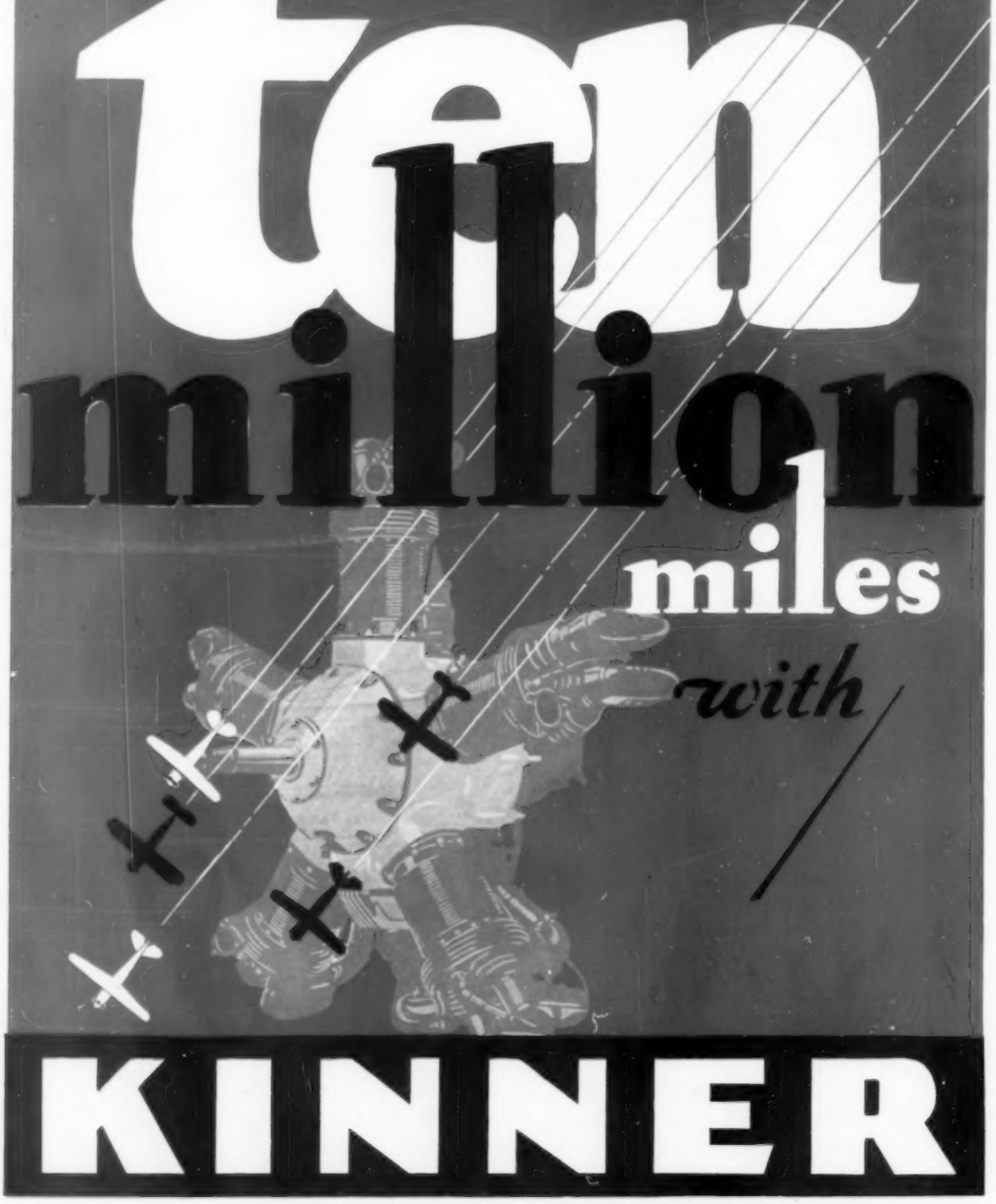
Travel the airways. You will increase your executive efficiency in direct proportion to the travel time you save.



AIRCRAFT MOTORS

LESS than two years ago American aircraft manufacturers and buyers accepted the Kinner aircraft motor as the logical power-plant for two and three place open and closed type airplanes. ¶ In this brief period Kinner motors have flown a total of over *ten million* miles in service. ¶ Because of their dependability, smooth power and superior performance, Kinner motors have outsold all other aircraft power-plants of comparable horsepower, since 1928. ¶ Fly in a Kinner powered plane. You will find one practical and economical to own, conveniently priced from three to seven thousand dollars . . . 5 cyl. 100 h.p. . . . 5 cyl. 125 h.p. . . . 5 cyl. 210 h.p.

KINNER AIRPLANE AND MOTOR CORPORATION ◆ ◆ ◆ Glendale, California

Spain. Never deviating from the principle of nationalization, first formulated in Spain. Although U. S. capital and U. S. enterprise actually build the continental system, yet each company retains its nationality.

South America to be linked, via All America Cables, with the U. S. And through the U. S., with Europe. Here is a problem, and here is where Cables & Wireless, Ltd. rears its head. For this young British merger, freed from the lazy, smothering paternalism of the old British post office regime, has very vigorous ideas about control of world communications and about trade following cable and radio routes. In the great British drive for South American trade supremacy, a drive which enlisted the able d'Abernon commission in 1929 and next spring will call upon the super-salesman Prince of Wales, Cables & Wireless, Ltd. plays a prominent part. Cable rates are vital factors in the placing of South American business, and a rate difference of one cent a word or a time difference of two seconds a message carries more weight than one might suspect. The time problem, I. T. &. T. (through its All America-Commercial hook-up) is more than able to meet. Although a message from Rio to London via I. T. & T. companies covers 11,000 miles, All America Cables will give the Rio businessman minute service. Cables & Wireless, with a 6,000 mile direct line between the same two cities, cannot better the guarantee. But the rate war is very much a problem. Last month, Cables & Wireless cut its South American rate by eight cents a word; I. T. & T. had no choice but to follow. The eventual British goal, which is fortunately unattainable, is to make the South American-London service actually cheaper than the South American-New York service, and thus move not only cable files but industry itself from American to British markets. I. T. & T. will, of course, not permit it, and Cables & Wireless will ruin itself if it insists.

Here, however, one begins to see the Behn plan in its full proportions. The South American telephones; the cable links with the U. S., Europe, and Asia; the radio telephone; the European factories and telephone systems; radio across the Pacific to Asia, where the profitable Shanghai telephone company also provides an outlet for the Chinese manufacturing unit, China Electric, and where I. T. & T. is in a position to build a South China system should that ever be possible and desirable; and, finally, the nerve-center of this living, vibrating organism in the U. S. This to be a unified telegraph service, if and when the government and the Western Union agree; until then, a constantly improving Postal company. This to be also a unified Radio service, when the government permits R. C. O. to accept 1,200,000 shares of I. T. & T. stock in return for its communications systems. At the moment of writing, the fate of the consolidation cause in Washington is still in doubt. But whatever the immediate issue of these efforts, the final result cannot be in doubt. An American communication system is certainly in the making, and, just as certainly, the Brothers Behn are making it.

A NOTE ON THE PESETA

The decline in the value of the peseta from 13.30 cents at the opening of the year to 9.50 cents last month focused attention on the difficulties which I. T. & T. has had in converting its foreign currency profits into gold dollars with which to pay American interest and dividends. Over a long range, I. T. & T. is protected on its investments in Spain as well as in other foreign countries by a provision which allows the company to make the stated rate of return on investments on the basis of gold dollar costs to the I. T. & T. Although foreign currencies may depreciate, this makes it possible to revise rates to restore the gold return on investments to a proper level.

One other protection of I. T. & T. is the wide diversification of its foreign commitments. There can be no doubt, however, that a major depreciation of currencies, such as occurred at the end of the War, would leave the I. T. & T. temporarily in an embarrassing position. Rate structures even under normal conditions are very difficult to adjust rapidly, and there may be a lag of several years between the actual depression of the foreign earnings in terms of gold and the first opportunity to restore them through changes in rate structures.

THE MAN WHO BUILT ST. PETER'S . . . ALSO DESIGNED A UNIFORM

Poet, painter, architect, and sculptor, Michael Angelo not only built St. Peter's, painted the Sistine Chapel, carved the Moses and the David—he designed the uniform of the Vatican Guards.

In the magnificent background he created for the Church, he knew the importance of every detail. Even the livery of a servant was worthy of his care.

Today Business is creating its background. Beauty is being used to increase prestige. Beautiful furniture and rugs are chosen for impressive offices. Even the quality of business stationery—the uniform of the letters—is not beneath the notice and care of progressive business men.

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Many important executives take care of the important detail of letter paper by simply specifying "Crane's Bond". They have found that every letter on this 100% new white rag paper represents them with distinction.

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New Western Electric Plant, now under construction at Point Breeze, Baltimore, adjoining the new Municipal Airport.

A *story of* BALTIMORE *the camera can't tell*

NOT so long ago, the Western Electric Company, in looking years ahead, saw its existing plants outdistanced by ever-growing needs. A new location was necessary; it might just as well be ideal.

Quietly a study was made. City after city and claim after claim were judged by the facts.

Baltimore was chosen. Chosen for her natural facilities—her understanding of industry—her citizens' willingness to get together.

For included in the ideal fixed, were seven physical requirements which Baltimore did not then meet. Unselfishly Baltimore's leaders, corporations and citizens got together—and *met* them.

Now Baltimore has the new Western Electric plant pictured in its splendid progress. Baltimore offers the same natural facilities and intelligent coöperation to any sound industry seeking an outstanding location.

And the Baltimore Trust Company, with its fingers on the pulse of business and industrial Baltimore, is ever at your service.

Write for our interesting booklet, Locate in Baltimore, *describing Baltimore's shipping and manufacturing facilities.*

BALTIMORE TRUST COMPANY
BALTIMORE · MARYLAND

MEMBER FEDERAL RESERVE SYSTEM

The Cabinet of the Brothers Behn

(Continued from page 45)

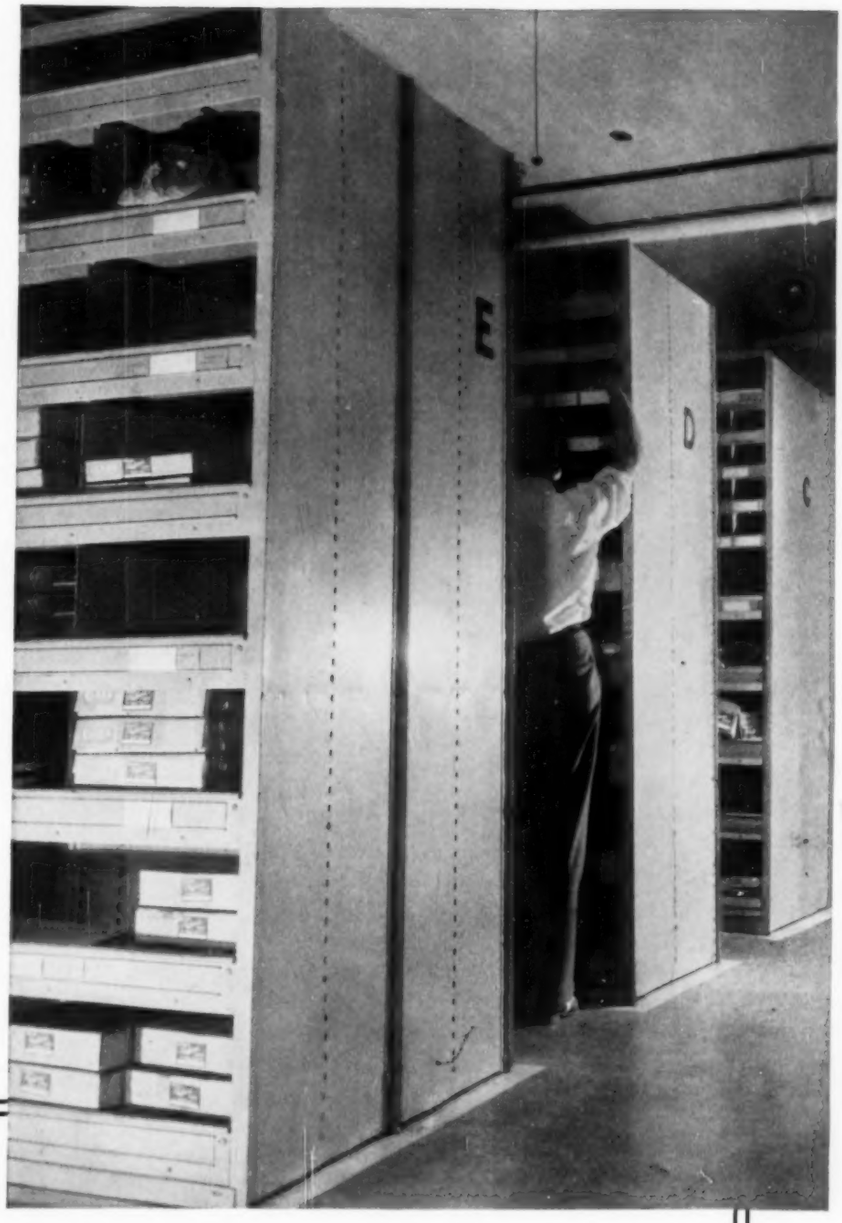
The Conde was an intimate friend of Primo de Rivera, whose cordial support was at that time of the greatest assistance to the Behns. He had also followed his uncle as president of the Compania Transatlantica, operating as many as twenty liners and freighters between Spain and the Americas.

Conde de Guell belongs to the 1925 (Spanish) vintage. But 1926 did mark the appearance of a new and important group at the I. T. & T. table. This included Mr. George E. ("Ping") Pingree, who had been the boss of International Western Electric under A. T. & T. management, and was to remain its boss under the new name of International Standard Electric and the new management of the Behns. And as the purchase of this huge manufacturing enterprise had brought J. P. Morgan & Co. into the I. T. & T. picture, it surprised no one, in 1926, to find two Morgan partners on the board. One of these, of course, was Russell C. Leffingwell, the expert on international finance who had come to Morgan three years earlier, the other was Arthur Anderson. These Morgan men represented the first new financial interest since the arrival of Cutler and Bellamy. The relations of the various banking houses had been thoroughly worked out, however, and neither E. B. Smith & Co. nor Dominick & Dominick lost the position they had so shrewdly won. In this year, there came to the board a new face to many, but an old friend of the Behns—Mr. Wolcott H. Pitkin, one-time Attorney General of Porto Rico and a most able lawyer. A quiet, deliberate man, close adviser to the Behns, Mr. Pitkin's prestige in the company has steadily grown.

The next group to find seats at the table came directly from All-America Cables, which had been added to the I. T. & T. system in 1926. W. Emlen Roosevelt headed this group, and with him was that persistent social crusader, Mr. R. Fulton Cutting. Last year, when Mr. Roosevelt died, Mr. Cutting became chairman of All-America. From behind his great beard have come, upon occasion, rather startling remarks. One such was his last winter's pronouncement, as president of the trustees of Cooper Union, in favor of "some sort of unemployment dole." In this year, together with Messrs. Roosevelt and Cutting, the board table received I. T. & T.'s secretary, Mr. Logan N. Rock; and one of the most active of Wall Street's corporation lawyers, Mr. Lansing P. Reed, who follows Mr. Gardiner in rank at Davis, Polk, Wardwell, Gardiner & Reed.

Last of all to the I. T. & T. table there advanced, in the sprightliest possible manner, a trim, dapper gentleman who is the most puzzling phenomenon in Wall Street. It is perfectly easy to say that Mr. Clarence Hungerford Mackay is a charming, accomplished dilettante. Stemming from that rough and lucky miner, old John W. Mackay, and the proud woman who was his wife, Clarence Mackay was far from rough and had no need to be ambitious. He was and is one of the best squash-tennis players in the world. His peerless collection of medieval armor (which requires the constant services of one man plus silver polish) is internationally admired and envied. He is the godfather of the Philharmonic Orchestra in New York. Yet Mr. Mackay is deeply attached to that country from which he sprang—the graceless, dirt-rich hills of Nevada. That state will never again enjoy such a benefactor as Mr. Mackay. He supports its university; last month he opened its school of mines. Debonair as he is, his dilettantism surprisingly extends to those homely roots which are not usually remembered on Long Island.

In the offices of the Postal Telegraph Co., Mr. Mackay is at once the armor-collector and something altogether different. He is casual, unpredictable, often inconsequential. But there is not a man in I. T. & T.'s great building at Broad and Beaver streets who does not like him, listen to him, and become increasingly loyal to him. And there is scarcely a door in downtown New York through which he cannot walk, unannounced and welcome. He built the Postal into a great company. Others are the executive chiefs today, but Mr. Mackay is very much there, very much needed, very much loved.



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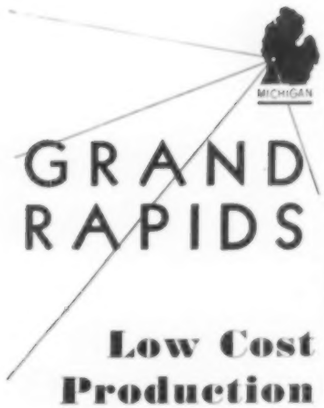

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A flat statement, yet not overdrawn, for Grand Rapids can show well-located factory sites at 30 cents the foot. It can show A-1 construction jobs at one-half metropolitan cost. It can surround such an investment with a live industrial community of 200,000 persons, an ample labor supply of exceptional quality.... men and women, loyal, trained, hard-working, strike-free — an unusual condition.

THIS bank—the Old Kent — trusted counselor to Grand Rapids industrial life for 77 years, will be glad to demonstrate the fact that Grand Rapids possesses definite and unusual advantages which will result in bigger annual profits. A letter will bring you convincing proof.

OLD KENT BANK

West Michigan's Largest

Story of An American Photographer

[Continued from page 89]

Lloyd docks appear on these pages.

In Berlin, the studios of UFA and the many plants, ringing the city, of the Allgemeine Elektricitaets - Gesellschaft, the great electrical equipment company over which ruled Dr. Emil Rathenau. In Berlin, too, day after day of conferences with officials of the Dye Trust (I. G. Farben). Not only had no photographer ever been admitted to the synthetic nitrogen plant at Leuna, but no woman on any errand had passed through its barred gates. At length the way was cleared, and late in July Miss Bourke-White took the series which illustrated the article on nitrogen in the October issue of FORTUNE.

In all, Miss Bourke-White took more than 300 photographs of industrial Germany. They constitute the most important illustrative record yet made of that nation's post-War recovery.

If there were any discomforts during her subsequent inspection of Russia, it was no fault of the Soviet Government. She was provided with a sheaf of official papers nearly as large as her own collection of photographs. The commissar of railroads, M. Serebriakov, gave her power to summon a private train any time she chose. She photographed Colonel Cooper's dam across the Dnieper and again ventured into many plants which are today the most significant development of the new mechanized Russia. She was especially impressed with Russia's consuming interest and friendliness toward the U. S.

The extreme poverty of the country and the widespread hoarding of money, however, worked its hardships upon her as well as upon each and every native. There is an appalling and sometimes dangerous lack of food. Miss Bourke-White had guarded against this by bringing with her from Germany a trunk full of canned foods. But these rapidly disappeared, leaving only baked beans, on which she lived for an entire week.

Nor, because of the Communistic ideals of the country, was it tactful of her to wear stockings other than cotton. Few sharper contrasts exist than that between Berlin and cities like Moscow or Leningrad. Berlin is still in the midst of its mad post-War gayety. Its night life is more brilliant than that of Paris. In Moscow, at night, there is silence in the long chilly streets. The beggars will not come until dawn.

In Russia, offers of marriage are as casual as an invitation to cocktails in America. It took twenty-four hours to obtain a divorce (only one party need apply); it took a great deal less time to be married. During her five weeks in Russia, Miss Bourke-White received five courteous, if not modest, proposals. She returned to the U. S., however, with no Russian husband.

She did bring back, however, a keen curiosity concerning all things European. While Miss Bourke-White will continue this winter her explorations into American industry, she plans next summer to return to Germany and Russia.

Miss Bourke-White has been an associate editor of FORTUNE since its inception.

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VINOY PARK HOTEL

Faces glorious Tampa Bay . . . the largest fireproof hotel on Florida's West Coast. Complete in every particular.

Sun bathing . . . and all recreational features. Booklet. *Managing Director*, Clement E. Kennedy.

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What it Does and How to Do it

This booklet sets forth—

1. The reasons for a budget in business.
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Particular attention is directed to the booklet at this time, because of the peculiar importance of the budget in the control of finances and improvement of organization.

The present edition is a second printing, revised and enlarged, of the original issued by Ernst & Ernst in 1925. It has forty pages with six exhibits. *Mailed on request of nearest office.*

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THE WEST is calling you. Sunny days have opened the way to new delights, new adventures. Here days are balmy, nights clear and starlit. Sunset afterglows, indescribably beautiful, are mirrored by bronze facades of majestic peaks. Spanish Conquistadores found this land of delight four centuries ago. In recent years the Southwest has been re-discovered as the real winter haven of sunshine and low humidity . . . TODAY you may live with every comfort in modern hotels, apartments, houses and guest ranches, or if you prefer, you may go exploring into little known wildernesses of the many mountain ranges in West Texas and Southern New Mexico. . . . Every outdoor sport is yours to enjoy in and near El Paso. Across the Rio Grande, 6 minutes and 6 cents away, is Juarez, Mexico, land of gay cafes, of bullfights, of three century-old missions . . . Leave cold, dark, dreary days at home. Come now this winter for health and pleasure. . . . Special low all-winter railroad rates, also 10 day stop-over privilege.

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SCORES of Bellanca owners have proved that the single-engined cabin plane is indispensable to modern business. The great majority of Bellancas in service today are working for business men. In every field of aircraft operation, these swift, sturdy, efficient planes earn the highest praise for their economy and their perfect safety. The Bellanca carries almost 1,200 lbs. payload at 145 miles an hour. The time gained for the business executive amounts to a definite advantage over his rivals . . . a fact recognized by the prominent men who have bought the Bellanca as "America's finest airplane."

COMPLETE SPECIFICATIONS OF ALL BELLANCA MODELS, BUILT TO CARRY 6 TO 14 PERSONS; ALSO A SUMMARY OF OPERATING COSTS—ON REQUEST

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Bellanca Pacemaker, Mr. Wm. M. Campbell, Campbell-Taggart Associated Bakeries, Inc., Kansas City. Business and personal travel.

Bellanca Skyrocket, Mr. Nathan L. Jones, president, Western Telephone Corporation of Nebraska, Omaha. General business use.

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Bellanca Pacemaker, Greenfield Tap and Die Corporation, Greenfield, Mass. Executive travel, sales promotion, emergency deliveries.

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Bellanca Skyrocket, Mr. L. J. Shields, president, National Battery Co., St. Paul. Business travel.

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BELLANCA

Bright Young People

[*Continued from page 59*]

Irish priests were sent across the channel to convert the heathen Britons, devout Celts gathered in that neighborhood to drink and bathe in the miraculous waters of St. James's Holy Well. Be assured that no upright Church of England Guinness has ever attributed miraculous powers to Guinness's stout. Even in Arthur Guinness's time the Holy Well of St. James's was too polluted to use for anything more than cooling pipes. Just the same, the legend helped sell many a barrel.

Guinness today is the world's largest brewer of stout. They brew over 115,000,000 gallons a year and print enough stout labels to put a girdle round the earth.

* * *

Even more important than the Guinness brewery are the Guinnesses. After the War, the old leaders of smart London society were dead or nerve-shattered or financially ruined. There remained the Guinnesses. They were talented. Their sons were handsome and their daughters lovely, the titles of the heads of the family were granted by Queen Victoria and had none of the uncomfortable newness of a Leverhulme or a Beaverbrook, and best of all they were extremely rich—even by American standards. London society even up to Buckingham Palace had a rush of Guinness to the head—today a London affair without at least a brace of Guinnesses is unthinkable.

They are a legion in themselves, and there is the word of the editor of *Debrett's Peerage* that Guinness is the most complicated family in the book. For the purpose of this article they may be divided into Old Guinnesses and Young Guinnesses. Of the Old Guinnesses, three are important. Lord Iveagh, Lieutenant Colonel Rt. Hon. Walter Edward Guinness, and Hon. Arthur Ernest Guinness, all brothers.

Rupert Edward Cecil Lee, Earl of Iveagh (pronounced Iver) is head of the family and chairman of the brewery board. He is extremely abstemious and has very little interest in brewing; agriculture is his real hobby and he has a model farm at Woking in Surrey as a training ground for young men anxious to emigrate to Canadian farms. While at Cambridge, Lord Iveagh was a notable oarsman. He won the Diamond Sculls at Henley in a famous race with Blackstaffe, the champion that is still discussed by old Light Blues. One of his sculls splintered against a hidden rock 200 yards from the finish. In politics he was a member of the House for seventeen years. On entering the House of Lords in 1927, his Southend seat was contested and won by his wife who, with her money, her interest in farming, her inheritance of her husband's political career, is a British parallel to Ruth Hanna McCormick. They are seldom seen at parties of the Young Guinnesses.

"Rupert," explained the late Lord Ardilaun's secretary, "was always the soul of stability."

Ask a political reporter about Colonel Walter Guinness, and he will answer immediately, "The man who stabilized the British egg." When he was Minister of Agriculture in the last Conservative cabinet, British eggs were sorted, graded, candled, etc., for the first time. Colonel Walter is the most politically active of the elder Guinnesses and probably the least pompous. He displays a certain sly humor in the House, and though personally a teetotaler and a non-smoker he has broken more than one lance with Lady Nancy Astor, famed prohibitionist.

Though not a man at St. James's Gate will admit it, the real head of the brewery is not Lord Iveagh, but his brother Arthur. Guinness never advertised until two years ago. Astute Arthur Guinness realized that with modern standards of living and the world-wide spread of luxuries, there were fewer and fewer people who really liked the taste of such a stalwart plebeian brew as stout. On the other hand, it contains 8 per cent of alcohol and it is nourishing. A vigorous advertising campaign was started, concentrating on the medical properties of stout. "Guinness is Good for You!" "Guinness for Strength!" It is a fact that two large glasses of Guinness are apt to put anyone to sleep. Most company directors would gloss over such a fact, but not honest Arthur

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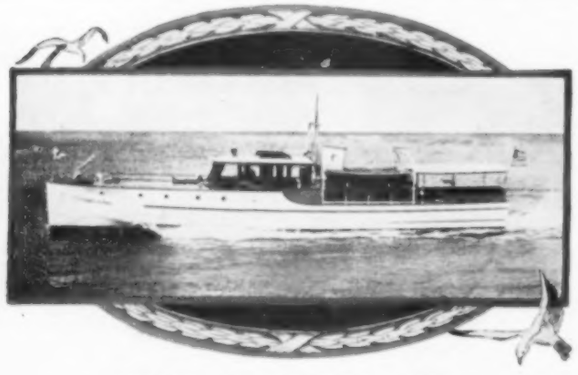

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SCRIPPS
• THE MOTOR THAT CROSSED THE ATLANTIC •

Guinness. He admitted it. Pamphlets were issued on "Guinness for Insomnia." "The wearing and devitalizing results of want of sleep are well-known," they read. "The soporific effects of Extra Stout are sometimes remarkable and doctors have declared it is preferable to opium . . ."

The Old Guinnesses don't drink anything, and the Young Guinnesses, their nephews, nieces, and cousins obviously don't drink stout. There is nothing soporific about them. They and their friends form a noisy inner world known to society reporters as the Bright Young People. They are notable for two things, magnificent weddings and uproarious parties.

Guinness weddings are almost as newsworthy as Lipton yacht races. For the past three years, they have left a trail of pearl-strung bridesmaid rotogravure pictures through the entire illustrated press.

Now for the parties. The Guinnesses invented the famous treasure hunts in which Bright Young People in roadsters would meet at one of the stately Guinness houses, be handed a series of cabalistic clues, and dash off all over London in search of the treasure. So successful were the treasure hunts that they spread to America and tied up the traffic of New York, Boston, and Philadelphia for most of one season. The Guinnesses gave a bathing party at St. George's Baths at which the helmets of the policemen who came in to keep order were thrown into the pool. This was followed by a Russian Party and a Greek Party, which attracted considerable unfavorable comment from the more conservative family journals, and finally a Baby Party at which the Bright Young People, actors, playwrights, and a few belted earls in rompers raced round Grosvenor Square in perambulators to the popping of tabloid photographers' flashlights.

It was the Guinnesses who started the fashion of midnight bathing, motoring twenty-one miles to Windsor for a moonlight swim in Cuckoo Weir, the swimming hole of Eton College.

It was Kenelm Lee Guinness who drove a steam roller over a monumental pile of tin cans to hear what a loud noise really sounded like.

It was Bryan Guinness and his wife (the Hon. Diana Freeman-Mitford) who gave an exhibition of fake modern pictures and fooled even the serious-minded Mr. Lytton Strachey into buying one for $75.

Almost the latest occasion for Brightness was the wedding of Miss Maureen Guinness to the Earl of Ava. After the reception, squadrons of Bright Young People raced down to Croydon to see "Maggie" off and drink a last toast to the happy couple. There was plenty of champagne but no glasses at the field, so the toast was drunk from the empty radiator caps of the cars. And the coming-out party last year of Lady Honor Guinness (she who at eighteen campaigned for the flapper vote) was acknowledged London's smartest entertainment.

Despite this slightly Hollywood atmosphere, all of the Guinnesses have married conventionally with the exception of Meraud, daughter of Mr. and Mrs. Benjamin Guinness. The Benjamin Guinnesses, by the way, are good friends and distant cousins of all the other Guinnesses, but they have no connection with the brewery. Meraud is a talented painter, she dresses oddly and talks loudly, exhibits at the Salon des Independents in Paris, and eloped a couple of years ago with a Señor Alvaro Guevera to the south of France.

Naturally, such a spectacular group could not long exist without being fictionized. This was done last winter by their friend, Evelyn Waugh, in his novel, *Vile Bodies*. Evelyn Waugh mentioned no names, but the Guinness type of antics and the Guinness attitude were as easily recognizable as was Rosa Lewis in the person of "Lottie Crump." London society is happy led by Guinnesses. For the serious, there is Lord Iveagh (who when he was a child spelled "wife," "yph") and the Hon. Walter, to whose home in Grosvenor Square the King and Queen yearly come to dine. There is Mrs. Richard Guinness, whose pearl earrings are the finest in England. And there are the unbelievable gay ones with the unbelievable names: Aileen and Maureen and Oonagh, the daughters of Arthur; Meraud, the artist and daughter of Benjamin, her brother Loel (married to Hon. Joan Yarde-Buller), and her sister, Tanis, engaged to the Hon. Drogo Montagu. Richard Guinness has two step-daughters whose names, by comparison, are almost normal: Zita and Theresa. One calls Theresa "Baby."

SALES ♡♡ STEADILY INCREASE IN KANSAS CITY

NEW IN KANSAS CITY

Many millions of dollars are being spent to rush to completion new pipelines for the delivery of petroleum products from the Southwest to the East. Kansas City is the center of this activity and the *source* of supplies. This is *new money* that is giving additional employment, a distinct aid in maintaining the prosperity of the Kansas City territory.

♡

THE *work* of making 1930 a good sales year in the Kansas City territory goes on, increasingly. At the end of the first six months, a remarkably large number of lines were holding their own with the 1929 record, or bettering it—and improvement in conditions in the last half continues. ¶ Merchants in the territory are buying with new confidence. Raw material purchases indicate a manufacturing faith in the immediate future. Millions of dollars are being spent in downtown construction; more millions in pipeline development, with Kansas City the source of supply; further millions in industrial development to meet the above-normal demand for commodities that overnight will send production demand rapidly upward. ¶ The Kansas City market was last to feel the recent general business hesitation—*and is first to respond to the new buying confidence already reappearing.* ¶ You can sell in the Kansas City territory if you have production and distributing facilities to make the prompt and economical delivery that the territory demands. Kansas City serves 19 million more economically than any other market—it can be *your* territory if you wish to cultivate it intensively *from Kansas City.*

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The new freight rates between Kansas City and the East have abolished the Mississippi basing line and given Kansas City a new through rate. Write for detailed information.

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Representatives at any of our offices will assist you—in person or by mail—if you will submit a list of your holdings to them.

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Genteel Beauty in Steel

Product of the
BROWNE-MORSE COMPANY
Muskegon, Michigan

Armored Cars

[*Continued from page 47*]

stop. He must also call his office whenever he is twenty minutes ahead or fifteen minutes behind his schedule. Thus the home office always knows almost exactly where he is and can usually reach him within eight or ten minutes. There is also a group of inspectors who travel around town checking up on drivers and cargoes. The system just described is the Armored Service system; others differ from it only in detail.

Bank funds are the most spectacular cargoes, but pay rolls are the backbone of their business. There are two types of pay roll service—the delivery of the pay envelopes to the customer's office or this same delivery accompanied by the actual paying of the individual employees. A concern getting the second type of service need not worry about any detail of paying its men (except the item of supplying the money) as the transport service makes up the envelopes in its own office, ships them in its cars, sets up a pay-off desk in the customer's plant and hands each man his money while two or more armed men superintend the operation.

Nor is the service expensive. Armored has a flat charge of $4.00 per cargo not exceeding $10,000 and not to be delivered at more than usual speed. In addition to this charge, pay rolls cost $3.00 per 100 envelopes, with an additional charge of two cents per each additional envelope where payment is made directly to the men. Armored pay rolls run from $110 to several hundred thousand dollars, and the first pay roll robbery is yet to be attempted.

Other branches of money transportation include the handling of bank funds (Armored's most notable client is National City Bank of New York) and the delivery of deposit funds to banks. The day's income of the New York Telephone Co., the Brooklyn Edison Company, the Hotel Pennsylvania, Bloomingdale Bros., Frederick Loeser, Flint & Horner, New York *Times*, Sheffield Farms, and many another concern are banked by Armored and when necessary are stored overnight in one of Armored's safe deposit vaults. The smallest amount ever dignified by Armored Service transportation was the sum of eighty-one cents, which represented an overdraw made on a bank by a chain store branch. The bank wanted the eighty-one cents back to balance its books and the chain store had a rule that no employee could take any money out of the store, so the Armored people took back the eighty-one cents and, incidentally, charged the chain store more than the amount of money transported. Largest transport was the United States Trucking job, already referred to, in moving so notable a gold center as the New York Federal Reserve.

The movement of money in armored cars is perhaps most socially significant as an illustration of self-protection as distinguished from social protection. There are some 18,000 policemen in New York City, but if they were the only reliance against banditry the present security in money transport would certainly not exist. Just as the old Vigilantes of gold rush days came into existence through the bad functioning of the duly constituted authorities, so the banker and the merchant in our large cities of today have been compelled to supplement police protection with additional and private measures. It is, however, difficult to associate the armored car with the larger question of gang warfare and racketeering. The gang problem has become essentially a prohibition problem, and the racketeer has on the whole confined his attentions to the laundry man, the dry cleaner, the produce merchant, and other of our less centralized and less Anglo-Saxon industries. The armored car has demonstrated that the highwayman can be overawed by a display of strength and vigilance (for the gangster has a reputation for cowardice), and the completeness of the protection it offers is an illuminating commentary on the difference between private and public efficiency. And certainly everyone who has large sums that must be regularly transported should read in the report of every hold-up a suggestion to look into the advisability of protected transportation. But the bandit who realizes that funds carried by small armies in young forts is hard money will merely continue to seek his easy money somewhere else.

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The metallurgist can see it. His microscope shows a complete and uniform austenitic* structure—absolutely non-magnetic.

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*AUSTENITIC, a term denoting a perfectly homogeneous metallurgical structure of alloying elements in solid solution. Chrome nickel steels, only when truly austenitic, are fully corrosion-resistant in either their unpolished or polished state and offer economical characteristics of ductility and workability.

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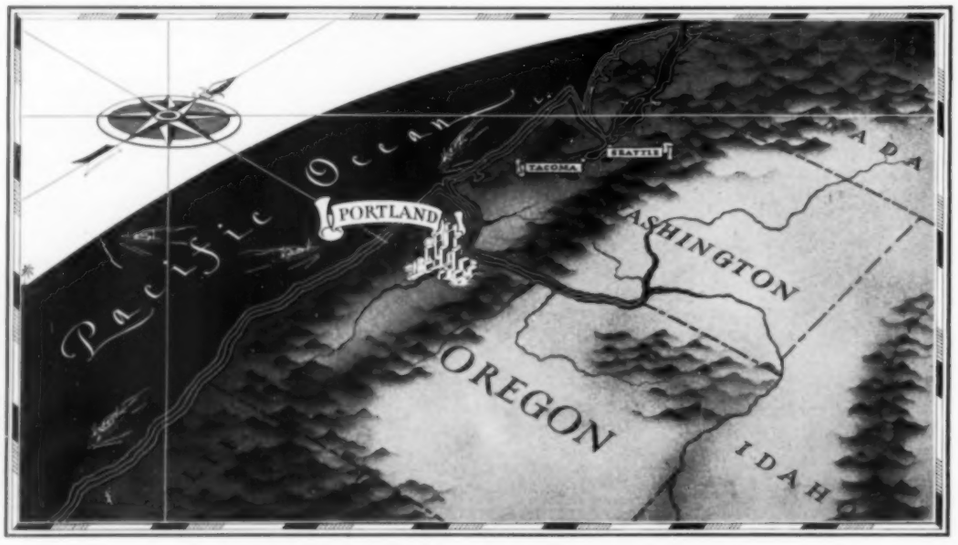


COME ON-TO-OREGON « « « AND PORTLAND

PORTLAND . . . the seaport . . . distributing center of the Pacific Northwest . . . a busy metropolis of 301,890 people (1930 census), and the commercial capital of a contiguous market of 2,500,000 population, stands strategically at the gateway to the Columbia River Basin. Here begins the only water level route to this Empire of over 250,000 square miles; an area equal to all New England plus New York, New Jersey, Delaware, Pennsylvania, Ohio and Indiana.

Ships from all ports unload their cargoes at Portland, returning with lumber, wool, fruit, salmon, wheat, and other products. Four transcontinental railways, oceanic, coastwise and river shipping, a network of auto freight lines, 2700 miles of hard surfaced highways, give quick and economical access to the Pacific Northwest, the intermountain, and national markets.

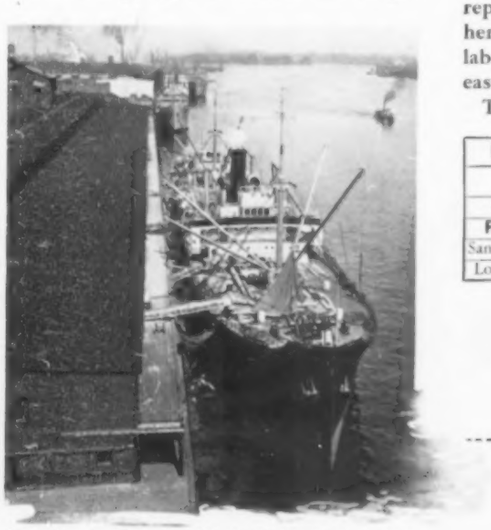
And here living is at its best! Portland is a home city—a veritable garden spot caressed by a mild, animating climate.* Outdoor sports and gardens are enjoyed the year 'round by a home loving people (44.6 per cent of Portlanders own their own homes), who earn $304 more per annum than the nation's average.

Oregon's climate* and environments are conducive to more productive and efficient labor, healthier and higher standards of living. Portland manufacturers in several lines familiar with labor conditions elsewhere, report that the higher efficiency of workers here is equal to a saving of 15 per cent in labor costs as compared to the cost of labor in eastern and middle-western industrial centers.

Today, time and distance are no barriers to men. Why not live as you would wish to live, where *you would like* to live? The man who has attained a measure of success, who has initiative, foresight, and ambition, can achieve a greater degree of success and enjoy a fuller measure of the worthwhile things in life in Portland.

"The Era of the Pacific" has barely begun. The next theatre of national development will be on the Pacific Coast. A rich market now, it is growing bigger and richer every day. Oriental trade is forging ahead. Capital in increasing amounts is developing Oregon's basic resources. The eyes of industry are turning Westward! Get in on the ground floor!

Interesting and authoritative Industrial Data will be sent with the compliments of the citizens of Portland. *Write for it.*



Ships drop their barnacles while they load in Portland's fresh water harbor. Drydocking and scraping is unnecessary.

Fewer Fog Hours at Portland Harbor Entrance

Port	*Distance to Ocean*	*Annual Fog Hours*
Seattle	117 miles	1091
Portland	**110 miles**	**541**
San Francisco	10 miles	1089
Los Angeles	24 miles	841

10 year average

***PORTLAND'S ANIMATING CLIMATE**

Scientists agree that man is more active physically at a temperature of 55 to 70 degrees than when it is colder or warmer and that he does his best brain work when outdoor temperature is around 40°. They also agree that Pacific Northwest climate fits these specifications exactly. Portland's average temperature for the past 10 years for January has been 39.6 degrees and for July 67.2 degrees. A seasonable climate without excessive humidity—it is animating and energizing, without extremes of heat or cold.

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Please send me FREE, Industrial Data on Portland and Oregon.

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Looking into a City: Pittsburgh

[*Continued from page 54*]

Oliver Iron & Steel. But if there is anything old and respectable and rich and independent in Pittsburgh, it is Jones & Laughlin Steel Corp., which has never merged with anything, has been financed almost entirely out of its own pockets, and earns $21,000,000 a year. And here are Mrs. Alexander Laughlin and Mrs. B. F. Jones Jr. living in Allegheny Town three months in the year, though both of them have magnificent estates on fashionable Sewickley Heights. Mrs. Laughlin was Mary Jones—her father was the founder of Jones & Laughlin, and her husband was the nephew of the other founder. Mrs. Jones is the widow of B. F. Jones Jr., one of the greatest steelmasters that Pittsburgh has ever had; and she is the mother of young B. F. Jones III, who probably inherits more Jones & Laughlin stock than any other single person.

Now when Pittsburgh is glibly characterized as Presbyterian, it is necessary to remember these magnificent families in Allegheny Town, to say nothing of the old families on Squirrel Hill. Pittsburgh seemed to supply most of the aristocratic element on the Fundamentalist side of the national theological quarrel several years ago. But Pittsburgh's Fundamentalism had nothing to do with the ridiculous monkey business of Bryan and Dayton, Tennessee. Pittsburgh was defending a tradition—the faith of fathers who had built a great city and whose widows were living. The perfect cavalier of this cause was Rev. Maitland Alexander, D.D., pastor emeritus of the old First Presbyterian Church, which is right in the midst of Mr. Oliver Rea's skyscrapers, like Manhattan's Trinity Church. There is nothing ignorant about Dr. Alexander. He is a very polished gentleman, and he too lives in Allegheny Town. He also belongs to the gay New York Yacht Club and spends much time in Palm Beach. Pittsburgh Presbyterianism is no more uncivilized than Queen Victoria's Anglicanism. And, as we shall see, it is a great deal more enlightened. But also, like the Queen's cosmogony, it passes. And the active pastors are far less belligerent than Dr. Alexander. Among them, too, is found the gentleness of spirit which is inescapable in modern Pittsburgh. Pastor of the East Liberty Presbyterian Church, where the Mellons go, is Stuart Nye Hutchinson, a genuine person who has written three books: *The Soul of a Child*, *For the Children's Hour*, *Bible Boys and Girls*.

* * *

So much for the rugged Scotch-Irish faith which erected at the confluence of Allegheny and Monongahela its greatest capital. But like every capital, it became cosmopolite. And now we find that the Rt. Rev. Hugh Boyle, Roman Catholic bishop of Pittsburgh, has a flock of 571,000 souls. He has 707 priests and 509 churches, eighty-one of which are within the cramped city limits of this one-time Presbyterian town. His signature is good in any Pittsburgh bank for as much money as he requires.

And besides the Catholic bishop, a great figure in Pittsburgh is Edgar Kaufmann. The most important annual show in America from an artist's point of view is the International Exhibition of the Carnegie Institute. Aside from artists, 5,000 to 10,000 Pittsburghers visit the show every Sunday of the fall and winter (a far higher percentage of the population than is to be found in New York's Metropolitan). This year the show rejoiced in many a handsome nude. There was also a gleaming, pink-coated gentleman out of *Spur*. And a picture called *Excursion*, showing an erect figure in rough woolen shirt, holding a walking stick. At this Pittsburghers stopped abruptly, not only because they saw an exceedingly handsome man with fine, dark eyes but because, as they exclaimed: "Why, that's Edgar Kaufmann." Mr. Kaufmann is Pittsburgh's brilliant and biggest merchant.

In a sense, Mr. Kaufmann is antithetical to old tradition. Old ladies and gentlemen, their sons and daughters, are somewhat fixed in their shopping habits, in a good old Pennsylvanian way. They go to McClement for flowers, to Weldin or Steinsapir for party engraving, to Grabowsky for furs, to Grogan (Pittsburgh's Tiffany) for jewels and wedding presents, to C. C. Mellor for pianos. It is perfectly respectable to shop elsewhere, but many a Pittsburgher never remembers where. Into this comfortable shopping atmosphere the great department stores have shouldered themselves. The first one to do so was Joseph Horne's, established so long ago that every good Pittsburgher considers it essential to have credit at Horne's. The Hornes are *Social Register* people and the late F. Joe Horne married a daughter of B. F. Jones. But since such a large proportion of the population lives on the average $1,700 wage, Pittsburgh has become a department store city, does more than half its retail business over the counters of a dozen of them. The blue bloods may buy in New York. The average Pittsburgh matron finds that she can very well satisfy her taste at Kaufmann's, Joseph Horne's, Gimbel's, Rosenbaum's, Boggs & Buhl's, McCreery's, or Frank & Sedar's.

And here is where Edgar Kaufmann has performed a miracle with his modern selling methods and his Bordman Robinson murals. For he has developed the largest and best-appointed department store in Pittsburgh. And possibly the best explanation of his $31,000,000 business is his own cosmopolitan taste. He loves beautiful things, has a theory that beautiful line and color ought to be emphasized in merchandise of whatever price. His small, new house in the Fox Chapel district is packed with millions in tasteful decoration—old masters, old furniture, tiles.

Most department store customers come from the "South Hills," on the other side of the Monongahela, and notably from Dormont. They come through the hectic Liberty Tubes, which burrow through a mountain from Dormont to the river. These were the first extensive tunnels built for gasoline traffic, the forerunners of Manhattan's Holland Tunnel, and they are hectic because policemen are rare and anybody drives just as fast as he likes. The Pittsburgher has other tunnels. He has funiculars that go straight up the sides of the hills, and he has grades that coil up them like snakes. Most of all, he has bridges—great black steel legs (and three just painted with white Mellon aluminum) stretching out across both rivers, so that from the air, Pittsburgh looks like a giant spider aswim on the water. There are 850 bridges in Allegheny County worth some $20,000,000.

Unusual though Pittsburgh hills and tunnels and bridges may be to a Chicagoan or Bostonian and unusual though its quaint but charming aristocracy may be, living so mildly in the midst of such apparent industrial confusion, nevertheless, most of its people are, it must be assumed, not very different from all manner of Americans elsewhere. Over their bridges in street cars, Fords, or Cadillacs, they come to the Golden Triangle to buy the things and to see the movies that all America loves. Indeed, what is peculiar to Pittsburgh, aside from such commendable features as its abundance of fine hospitals or its handsome patronage of the Theatre Guild, can best be summarized under two heads: Mellons, Steel.

III.—The Mellon Raj

ACTUALLY, the Mellons are not very well-known in Pittsburgh. True, the grocers spell melon, Mellon, and the latter is vaguely equated with omnipotence. But what the man on the street could factually tell you about the Mellons could be printed on a postcard. Yet perhaps half the people of Pittsburgh have some sort of daily dealings with this family.

Individually its members are easily accounted for. There was Judge Thomas Mellon, who left law and started T. Mellon & Sons, bankers, in 1869, and in his time ranked with Judge Reed (father of the present Senator) and B. F. Jones as first citizens of Pittsburgh. Judge Mellon died in 1908, after the death of his sons Thomas and George. They are the only three Mellons who have died.

Judge Mellon had three other sons, the eldest of whom is James, a delightful and subtly humorous gentleman of eighty-four who spends most of his time either on an expensive yacht or in a very simple house in a very simple town in Florida. James's son, William (W.L.) is president of the enormous Gulf Oil and is active in politics.

The Judge's other sons are Andrew William, seventy-five, and Richard Beatty, seventy-two, commonly denoted in Pittsburgh by the initials A. W. and R. B. These

two have been as close as David and Jonathan ever since Judge Mellon set them up in the lumber business from which they simultaneously, soon, and discreetly got out. What they are worth today is beyond the realm of ascertainable fact. New fortunes have derived from large-scale participations in so many enterprises. It is believed that A.W., the elder, was somewhat the leader during the half-century of fraternal partnership. But R. B. has definitely been in command of the Mellon Raj since A.W. went to Washington, and it is, of course, during this decade that the greatest expansion has taken place. In any case, the two brothers seem to be remarkably similar—A.W. perhaps more subtle, R.W. more robust (he has ridden his horse over fences within the year).

As everyone knows, A. W. has a daughter, Ailsa, Mrs. D. K. E. Bruce, who resides in New York, and a son, Paul, an able youth just out of Yale and Cambridge, who appears to be reluctant to assume the arduous responsibilities of Mellon finance.

R. B., too, has a daughter, Sarah. She married Alan Scaife, who manages the first manufactory established west of the Alleghenies (Wm. B. Scaife & Sons Co., 1802) and serves on important directorates. And of particular importance is the fact that R. B. has a son, R. K. All who seek him will quickly and easily find R. K. seated at an aluminum desk in the vice presidential office of the Mellon National Bank. Handsome, energetic, democratic in his interests and aristocratic in his tastes, R. K. resembles nothing so much as the ideal heir to a vast fortune.

There are vast and complex enterprises in Pittsburgh which have almost nothing to do with the Mellons. Nevertheless, it is difficult to overestimate the importance of Mellons to Pittsburgh. To them it has been motive, duty, devotion, and satisfaction. There is no reason why Gulf Oil should be headquartered in Pittsburgh—Gulf Oil, which by some accounts is the biggest of all oil companies and which is now erecting Pittsburgh's biggest building. No reason—except one: Pittsburgh is the Mellons' home. A. W. never bought a house in Washington; no more would he or R. B. or W. L. let Gulf wander off to New York.

To sketch in barest outline the structure of the Pittsburgh-Mellon empire, the place to begin is the bank where R. K., despite his thirty directorates, has begun his work in life. Mellon National is, of course, the biggest bank in Pittsburgh as to deposits and depositors. But while it is the cradle of the Mellon Raj and the tutor of her sons, it is no longer her structural center. That key position is occupied by Union Trust Co., a state bank two blocks up the street, which owns not only Mellon National but also Farmers' Deposit, Union Savings, and City Deposit Trust—a total of $500,000,000 in deposits. The nature of this bank must be firmly grasped. It is the product of the mind of Andrew Mellon, who founded it in 1889 at the age of thirty-four and was its first president; and it is also the product of the life of H. C. McEldowney, who works hard, says little, and believes in God.

The Mellons first knew Mr. McEldowney as an earnest young man looking for a job in a bank. He has been president of Union Trust for nearly thirty years and is certainly dean of the Mellon associates. Over his large executive signatures there has been evolved the Union Trust policy, which is to say, the fundamental Mellon policy, the policy of reserves. With a nominal capitalization of $1,500,000, President McEldowney and Chairman R. B. Mellon have piled up a surplus and undivided profits of $60,000,000. The capital stock has never split. There have been no mergers. (Merging is not a Mellon characteristic. But of course some merging Mellons have done—notably Standard Steel Car into Pullman Co.) UnionTrust's 15,000

P. & A.

RICHARD K. MELLON

As his father R. B. founded a bank in North Dakota, so R. K. enterprisingly develops a bank in the Schenley district. Two college presidents and the head of Mellon Institute are on the board. The banking room is beautiful, and the bank statement, though in relatively small figures, is strong.

shares are the nation's most expensive, have been quoted as high as $22,000 (George F. Baker's First National has never topped $15,000), pay a dividend of $200 plus $6.00 at Christmas, and at an average price of $17,000 a share, net yield, including the Christmas present, is 1.21 per cent.

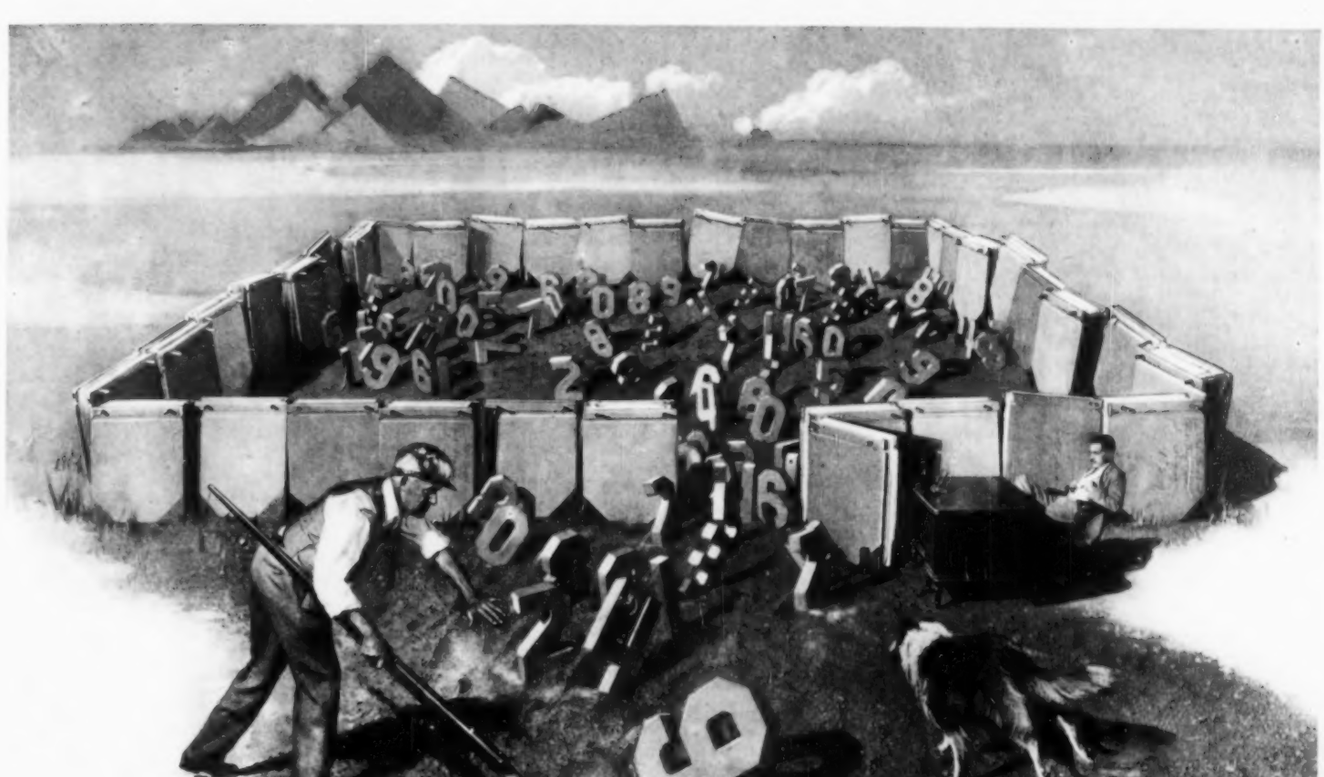
Union Trust is the investment institution by which the Mellons originated $200,000,000 of new financing for Pittsburgh last year, participating in issues of the nation's leading bond houses at the same time. A peculiarity of this financing is the virtual guarantee attached to it by the policy, inaugurated by R. B. at Mellon National some years ago, of retaining in its own portfolio some portion of every issue floated or even recommended.

The principle of reserves is the basic one that Richard B. Mellon brings to his fifty-odd directorates, and his son Richard K. to thirty-odd directorates and to the thirty-three banks of the Mellbank Corp. in the vicinity of Pittsburgh. It is the principle by which William L. presides over Gulf Oil. It is a principle dear to F. A. Leovy, president of fourteen Gulf subsidiaries. It is the principle that makes the Mellon fortune racial in scope, with a feeling for the nation's destiny playing through it. No Mellon company will ever be found paying its life out in dividends. Neither does one hear the jaws of steel-trap minds snapping out Mellonian decisions. For each new enterprise there is much quiet mental toil, investigation, weighing out, and a cautious but enduring decision. Like dinosaurs, Mellon enterprises are born from eggs.

It was that colorful Pittsburgher, J. M. Guffey, with his 80,000 barrel a day Lucas gusher at Spindletop, who put Texas on the volume production map. But it was Andrew Mellon who, as owner of most of the bonds, obtained control when the company went into the red in 1906; and it was Andrew Mellon, first president of the resulting Gulf Oil Corp., and his nephew, W. L., who made an average of $16,000,000 a year available for expansion during the next twenty years. The ante has been trebled in the past five years. As a result, Gulf is the world's third largest producer. In Louisiana, Arkansas, Tennessee, Oklahoma, Kansas, Kentucky, and California, Gulf owns or leases more than 5,500 wells on 340,000 acres; in Mexico and Venezuela, 302 wells on 193,000 acres. But these immense producing resources are as nothing in comparison to its reserves. In reserve, Gulf holds no less than 7,577,000 acres of probable oil land, or more than fourteen times the area of its production. It earned $45,000,000 or $9.83 a share in 1929, out of which it paid its cautious $1.50 dividend. But even at this rate, the stock-holding Mellons treated themselves liberally, for Aluminum Co. pays no dividend whatever on its common, though it earned $25,300,000 in 1929, or $11.18 a share.

Some of the profit on the steel erection in the new Gulf Building will stay in the Mellon Raj. For it happened that while Andrew was a director of the Pottstown Iron Co., a tall engineer named McClintic, who looks even taller than he is, and a stocky engineer named Marshall, who looks shorter than he is, approached him with the desire of setting up in business for themselves. They had just retired from the Shiffler Bridge Co. Mr. Mellon considered them, and after a typical Mellonian decision had been reached, there was born the firm of McClintic-Marshall, fabricators and erectors of structural steel. One of their earliest ventures was the Marshall Field store in Chicago, and they had so much to learn then that some of the steel was shipped to Chicago by express. Besides half of the nation's bridges, they built the lock gates of the Panama Canal; on Manhattan were steel-erectors for the Grand Central Office Building, the Graybar Building, and are now erecting the new Hudson River Bridge, the Waldorf-Astoria Hotel, the Stone & Webster Building. In Pittsburgh, they built the Koppers Building, are now erecting the Gulf Building. The 1929 business was over $50,000,000; and of their 600,000-tons annual capacity, 240,000 can be produced in Pittsburgh. Mr. McClintic and Mr. Marshall are also part owners of the Mellon-financed Koppers companies, which are also buyers of steel from McClintic-Marshall.

There is this peculiarity about Pittsburgh



Still waiting for the final figures~

How often can you get together the figures you want on scheduled time—whether it be weekly payroll distribution, monthly statements, semi-annual inventory, or the final figures at the end of the year? Don't you frequently have to wait for some department's or branch's figures to be *driven* in?

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industries: they are not merely financed—they are lived. Every Pittsburgh concern looks as if it were put there to stay. And every executive looks as if he were in there to stay. But this peculiarity is particularly true of things like the Union Trust Co., McClintic-Marshall, the Aluminum Co. of America. The most that one could make out of aluminum in 1850 was a watch-charm for the King of Siam. When Charles M. Hall brought his process to Pittsburgh from Oberlin, Ohio, and when Alfred E. Hunt joined him, aluminum was not—and it never has been—merely a manufacturing problem or a technological problem. Aluminum is an education. In order to be sold it must be lived, and no one has grasped this idea more clearly than the chief Aluminum stockholders, who are Pittsburghers to the core. The Mellon National Bank has done itself up in aluminum and points out that it saves fire insurance thereby; Brother Andrew and Brother Richard own all-aluminum automobiles, built specially by way of living experiment; President Roy A. Hunt, son of the founder, has lived aluminum since boyhood, when he entered the New Kensington plant as an apprentice—his executive offices are aluminum-furnished, and he uses aluminum ink in his advertisements; chairman Arthur V. Davis—one of the few Mellon men who might be called "dynamic"— has an aluminum watch, and has developed a waterpower system to expedite the manufacture of this, his favorite metal.

But the Mellon Raj, like Pittsburgh, is never a finished product. Across the face of the waters, in 1914, moved the metaphorically shirt-sleeved figure of H. B. Rust, who is and will remain one of the epic figures of Pittsburgh. He is connected through his mother with historic Robert E. Lee. He learned steel in the Pittsburgh Department of Public Works as a builder of bridges, and later with Colorado Fuel & Iron and Rust Boiler Co. Bought out by Babcock Wilcox, Mr. Rust was free to develop, with H. W. Croft of Harbison-Walker, an idea which has since revolutionized two vast industries—steel and public utilities. Pittsburghers tried and true, they knew what to do with this idea—they took it to Andrew Mellon. From their deliberations there arose a typical Mellonian dinosaur.

This is the Koppers Co., perhaps the most fascinating business that the 20th century has so far produced, certainly Pittsburgh's most mysterious. One is told that five men own the Koppers Co., and that these are A. W. Mellon, R. B. Mellon, H. B. Rust, H. H. McClintic, and C. D. Marshall. But what it is they own is most difficult to describe; and how much it is, is silence.

First it is necessary to understand that of all Pittsburgh resources, bituminous coal is the most important. It is important as a raw material, shipped out to every part of the country in competition with the bituminous coal of West Virginia and Tennessee. It is even more important as coke, to which state it is transformed by long baking. Coke is one of the three materials used to make pig iron, and pig iron is the basis of all steel. The fortune of H. C. Frick was based upon coke, and a turning point in the career of the Carnegie Steel Co. was its combination with the H. C. Frick Coke Co. Consequently, to say that the Koppers business is with coke is to say that its business is with the vitals of Pittsburgh.

The basis of Koppers is an oven invented by Heinrich Koppers of Germany, which not only changes coal into coke, but recovers the resulting gas, ammonia, tar, and benzol (i.e., what was formerly smoke). The two latter products are the source of 4,000 or 5,000 other things. It was the War that made the Koppers Co. From the allied nations, there had been going up a cry for ammonia, benzol, and toluol—derivatives of coal, which are so vital to modern explosives that the striking power of a nation is said to be in direct proportion to its supply of them. Of these necessities, which Germany had aplenty, the U. S. was mostly unaware. Mr. Rust set to work. For three years he-and-his built on the average of one coke plant every sixty days and a benzol-toluol plant every six weeks. And each succeeding plant embodied some improvement over its predecessors. And at the end of that time the U. S. was the greatest benzol-toluol producer in the world.

It is, literally, the smoke that used to blow down onto Pittsburgh from H. C. Frick's Connellsville inferno that has performed the Koppers miracles. This smoke comes out of the coke ovens and is transported in boa constrictor pipes to a recovery plant, which cools out the water, tar, and liquor and allows the gas to pass on to whatever outlets are purchasing it. The ammonia is combined with sulphur and shipped to the farmers of the Middle West as ammonium sulphate. The tar is manufactured (not by Koppers) into dyes, photo-chemicals, motor fuel (the benzine ring); into paints; into aspirin and pyramidon, which cure America's headaches; into creosote for pneumonia and croup; into cleanly lysol and carbolic acid; into luminol, the sedative, and phenylsalicylate, the aid to rheumatism.

But while the Koppers Co. is a magician producing all this out of its hat, it would be a waste of time to look for its plant in Pittsburgh. In Pittsburgh, Koppers has merely constructed ovens for every sizable steel firm. The 1,482 ovens at Clairton belonging to the Carnegie Co. form the largest by-product coke plant in the world. Into this plant go 31,000 tons of coal a day; out of it comes 15 per cent of the nation's coke (20,000 tons a day), together with 200,000,000 daily cubic feet of gas, which is piped up and down the Monongahela to operate every U. S. Steel open hearth in the region, approximately 90,000 daily gallons of benzol and 250,000 gallons of tar. And all this comes to life out of the smoke which H. C. Frick used to waste and dirty his neighbors with.

But Koppers Co. owns many of the sixty-nine by-product coke plants that it has built throughout the country. While Koppers does not manufacture beyond the raw material stage, it does develop markets for those who do. Wherefore Koppers has gone into business in a grand way, occupying for itself the major portion of the Koppers Building on the Golden Triangle. But as if there were not 4,000 other things to think about, the 11,000 cubic feet of gas which each ton of coal will produce every twelve hours in a Koppers oven, together with the fact that coke itself is used in the manufacture of water gas, have literally strewn the Koppers Co. over the map of the U. S. For this is their link with the public utility world; with St. Paul Gas Light Co. and with Public Service Corp. of New Jersey; with Samuel Insull and the Chicago By-product Coke Co., which supplies gas for Peoples Gas, Light & Coke Co. of Chicago; the United Gas Improvement Co. at Philadelphia, and through most of the State of Connecticut; the Boston Consolidated Gas Co.; Columbia Gas Supply Co. (Cincinnati and southern Ohio); Montreal Light, Heat & Power, Consolidated. The result is that Koppers is interested to an extent unknown in United Light & Power, the control of which it shares with Cyrus S. Eaton; United States Electric Power Corp. (Harris-Forbes), which controls Standard Power & Light (Byllesby) and Standard Gas & Electric Co., whose largest subsidiary is the Philadelphia Co., which controls most of the important utilities in and around Pittsburgh; Brooklyn Union Gas; Connecticut Coke Co. (gas); and $145,000,000 Eastern Gas & Fuel Associates (organized by Koppers), which now controls the $100,000,000 Massachusetts Gas Companies supplying the Boston metropolitan area.

So much for eggs and dinosaurs.

IV.—Steel

OLD-TIMERS claim to be able to judge the industrial pace of Pittsburgh inversely by the clarity of the atmosphere as they speed down the boulevards, through the tunnels, and across the bridges into the Triangle; and the Mellon Institute has estimated that the annual Allegheny soot-fall is from 600 to 2,000 tons per square mile. But the point to be observed here is Pittsburgh's consciousness of dirt, its passion for cleanliness. Its laundries and dry cleaners are exacting; its servants are rigidly trained to the cloth and the mop. The Pittsburgher loves white; his interiors are done up in white paint which he insists on keeping spotless. Windows of Pittsburgh houses are washed once a week—by the maid, not by some window-cleaning concern. Their curtains are fresh, their automobiles shine, their faces, hands, and fingernails are pinkly groomed. The only severe sufferers from the soot are the façades of buildings. Across the river in old Allegheny Town, Howard Heinz finds it necessary to wash his seventeen blocks of factories once a year, to manicure hands that touch food.

And what of this Heinz plant? What a monstrous Pickle it is, with its fictitious fifty-seven (for there are unofficial products, like the new tomato juice, that will be admitted to the charmed circle only at the expense of something already there); largest catsup

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cooker in the world; handling 1,000,000 bushels of tomatoes a year in its Pittsburgh kitchen alone; with more salesmen in Britain than any similar English firm; with a Swiss chef named Mohl, who tastes everything, and a committee that tastes everything: a $75,000,000 a year empire on which the sun cannot set, owned and operated by one single Pittsburgh family.

And not such a very large family. Old H. J. Heinz started out in 1869 (the year Judge Mellon went into banking) by growing and selling horse-radish. His sons Howard (president) and Clifford (vice president) now own 1,000,000 square feet of glass to cover their greenhouses, purchase the crops of 200,000 acres of gardens, and maintain twenty-five factories throughout the world. Their aunt, Elizabeth Heinz, sister of the founder, married Sebastian Mueller, who is an active vice president of the business. Howard Heinz married Elizabeth Rust of Michigan (no relation to the king of coke ovens), and their two sons are John, now at Yale, and Rust, now at Choate School. Howard is the breath and life of the business. Like other Pittsburghers, he too is gentle. His favorite subject is "heartpower," which he says is stronger than horsepower. His roots are deep in the Heinz business, in principles evolved in the 19th century by his father, who was one of the early promoters of idealism in business. There are printed mottoes on the walls, and the 1,300 window boxes of the old Romanesque buildings are gay with ivy and petunias. The factory floors are immaculate, and there are 60,000 visitors a year.

The reason why Heinz has to wash his factories once a year is that Pittsburgh is a city of blast furnaces. The blast furnace is older than Heinz, older than the Mellons, older even than old Mr. Oliver. The Anshutz furnace was founded in 1792 in the Shadyside district (now residential). The blast furnace is the prima donna of the steel industry, always spoken of as "she." All day and all night she is fed successive layers of coke, limestone, and Messabi ore; four times a day she is emptied, the separated iron and slag running down fiery trenches into ladles. Cement will be made from the slag, steel from the iron.

The chief magician of the iron world is the foreman in charge of "she." He knows how to keep his silicon below 1 per cent, his sulphur below 1/20 of 1 per cent. He knows how his furnace will act on a moist day, when she drinks in literal tons of water, the hydrogenation of which absorbs heat and throws all logical calculations awry. He knows the subtle difference between half a dozen furnaces. But he cannot tell you. He is the man of intuition, the impresario. Upon his inspired, unwritten wisdom Pittsburgh stakes hundreds of millions of its steel dollars a year.

And perhaps people usually think of the steel business as one big fire out of which comes one big metal. But of course everyone really knows better. If there are more than fifty-seven varieties of Heinz, there are fifty-seven times fifty-seven variations in iron and steel. And let alone products, there are considerably more than fifty-seven *concerns* in Pittsburgh which either make iron or steel or make things immediately out of them. For purposes of visualization only, the Pittsburgh steel world may be divided into three parts:

I.—*The U. S. Steel Corp.*, which manufactures a complete line of standard products by means of the Carnegie Co., National Tube, American Steel & Wire, American Sheet & Tin-Plate, American Bridge, Clairton Steel, and Oil Well Supply Co. (recently purchased from Pittsburgh's colorful banker, J. H. Hillman Jr.): coal mines, railroads, quarries, etc., etc. In Pittsburgh alone the Steel Corporation gives employment to more than 50,000 men, out of whose ranks have arisen many of the presidents of the individually great companies which make the greatest strictly industrial corporation in the world. These men—I. Lamont Hughes of the Carnegie Co. and F. W. Waterman of

Blank-Stoller

GEORGE M. LAUGHLIN JR.

Chairman of Jones & Laughlin, grandson of James Laughlin, who was B. F. Jones's first partner.

National Tube have the largest organizations—are experts in steel rather than finance. Together with many other subsidiary presidents elsewhere, they are held in economic unity by corporate principles emanating from 71 Broadway, New York, where the Steel triumvirate—Morgan, Taylor, Farrell—presides.

II.—*The diversified independents, of which the leader is Jones & Laughlin*, whose Aliquippa plant does everything to steel, from the ore through pig iron, steel ingot, bloom, and billet, to finished pipes and wire. Since its founding in 1850, two successive Joneses and three successive Laughlins, including the present chairman, George M. Laughlin, have developed it into the fourth largest steel business in the U. S. But the presidency has gone outside the owning families since the death of the great B. F. Jones Jr. in 1928, and was given this year to George G. Crawford, who had made his career in U. S. Steel.

Many another independent, diversified, but somewhat more limited in scope than Jones & Laughlin, inhabits Allegheny land, notably Pittsburgh Steel Co. (1929 net, $4,500,000), Allegheny Steel Co. (1929 net, $3,300,000), Oliver Iron & Steel, Lockhart Iron & Steel Co., and Weirton Steel Co.

III.—*The specialized independents*, who are legion. Outstanding among them is Blaw-Knox, run by the Lehmans, specializing in steel for concrete construction and electroforged gratings, gross business $17,000,000. And A. M. Byers, which goes no further than iron, but whose new $10,000,000 plant has brought into being the marvelous new process of mechanical puddling. And Crucible Steel, in which the Mellons are interested. And Vanadium Alloys Steel. And Spang-Chalfant, venerable manufacturer of pipes. And Davison Coke & Iron, which specializes in pig iron and coal by-products.

Generations of steel and iron families have built around the iron molecule and its strange actions a lore to which the layman cannot presume. Steelmen from top to bottom constitute a sort of fraternity. They have their own jokes, which are meaningless to outsiders. But in one iron and steel matter, the public has taken an enormous interest—the important matter of public relations. In November, 1930, Heinz celebrated sixty-one years of work free from labor troubles (see page 144). No iron or steel company could do that. But, if one leaves history and comes to the present, the amazing truth seems to be that the 100,000 men who work in Pittsburgh steel mills are about as happy as the 2,500 who work for Heinz. The difference which has come over steel and hence Pittsburgh (because it is steel rather than Heinz which is the criterion) can be simply illustrated in two sentences: (1) in the depression of 1892, a decade before U. S. Steel was born, there occurred at Homestead, near Pittsburgh, one of the worst strikes in the history of the industry, symptomatic of nearly a century of quarrels between capital and labor; (2) in the depression of 1930 Charles M. Schwab, at the Iron & Steel Institute before all the overlords of steel, made the astounding statement that "we will carry everybody connected with the steel industry safely through." To this Jones & Laughlin can add the specific fact that in October they had on their pay roll 97 per cent of the men who were on it a year before—most of the men were working shorter time, but everyone was earning something. What is true of Jones & Laughlin is true of U. S. Steel, where it is even more significant since the Steel Corporation is anything but a family affair.

Neither U. S. Steel's Farrell in New York nor Jones & Laughlin's Laughlin in Pittsburgh is an industrial philanthropist, the type of Golden Rule employer who has always made a sporadic appearance in industry. They speak today not from their individual kindly hearts, but from the council table of a civilized industry. And that industry the second or third greatest in the country. And that industry still remembering the times when it was a by-word for oppression. To steel has come not merely common humanity, but reason and policy and responsibility.

The Steel Corporation reached this goal through the slow and even overly cautious statesmanship of its late great Judge Gary.

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But in both cases there has been another factor which, quite as important as all the goodwill in the world, has debrutalized the iron and steel business. That is technology. Steel mills are no longer properly described as hells. They are more nearly described as a series of tracks and electrical impulses. But while most the mechanization of steel has necessarily been done in Pittsburgh, nevertheless, Pittsburgh has not achieved wide renown in the field of radical technological experiment.

V.—Technology

WHY has the $2,000,000,000 U. S. Steel Corp., dealing with the production of iron, one of the least understood of the elements, no research laboratory as famous as Bell and General Electric? Why is Jones & Laughlin, eighty years old, only now beginning to develop a laboratory? Why are Pittsburgh steelmen paying heavy royalties to Armco of Ohio for the use of the modern process for the continuous rolling of sheets? Why did H. C. Frick and the Steel Corp. after him allow $2.00 worth of smoke to escape from their beehive ovens for each of the thousands of tons of coal that they carbonized daily for thirty-four years? Why, when the by-product oven finally came to America, was it installed by the Steel Corp. in Joliet, rather than by Carnegie in Pittsburgh or by Jones & Laughlin or Pittsburgh Steel or the Olivers or the Lockharts? Why was neither puddling nor the Bessemer nor the open hearth invented in this greatest iron and steel center of a nation that was then becoming the largest per capita consumer of iron and steel in the world? To put the most fundamental question, why did this iron city defer the making of steel until 1875, twenty years after the invention of the Bessemer furnace, with the U. S. already producing 375,500 tons of steel a year?

No doubt there are good explanations for these questions, for steel is as ramified as life. For present purposes, we venture the observation that Pittsburgh is no pioneer. Pittsburgh, as has been said, is a Pennsylvania city, which means that it has many traits in common with Philadelphia, which means that it is basically conservative. Pittsburgh started life as the spoiled child of Chance, its father: a trading center fed by an endless stream of new blood flowing westward down the rivers and in wagons. And Pittsburgh started life as the spoiled child of Nature, its mother, who concealed in the neighboring hills boom resources of coal, iron, oil, and natural gas. The resulting city has had many things to do, but exploration has not been one of them.

Nor has selling been one of them. Pittsburgh does not know how to sell for the very good reason that what it makes is usually not something but only part of something else. The public does not buy coke ovens. When Robert Grant of General Motors is not selling automobiles, all of Pittsburgh must perforce make less steel. And only when Lucius Boomer undertakes to fill the biggest hotel on earth can McClintic-Marshall erect a new Waldorf-Astoria. Pittsburgh Plate Glass, which does a $17,000,000 business, spends but $100,000 a year on advertising, and that reluctantly and mostly on behalf of their paint division. For they argue that glass is glass. An expensive plate glass-consciousness campaign would merely help the business of their indistinguishable competitors.

For similar reasons Pittsburgh is neither a blatant nor a booster city.

We must not distort the picture. Pittsburgh is essentially American and, to a Frenchman, would no doubt appear to have all the American characteristics in normal proportion. But to an American the differences between Pittsburgh and the other cities are more interesting than the similarities.

The difference is illustrated in the matter of aviation. Pittsburgh makes a great many of the things which go into aëroplanes. Yet Pittsburgh was the only American city of importance that did not, as it were, fly the Atlantic with Colonel Lindbergh; and it had no suitable air field until every backwater town in the land had played hob with its budget to make one. But now that Pittsburgh has an airfield, it is a triumph of engineering. It happened this way.

Mrs. Henry Rea, who owns the skyscrapers, has a son who, when very young, required the services of a tutor named George Hann. Two years ago Mr. Hann (who had risen through the Oliver estate to be one of the city's leading attorneys) observed that Pittsburgh was not on any air system. The New York-Chicago line passed over the hills to the north without a thought to his great city. The first thing he had to do was to organize Pittsburgh sentiment. This he did not only by ballyhoo, but in one quick, spectacular maneuver. He took 100 leading Pittsburghers in a special train to Long Island, where dozens of planes were landing and taking off in quick succession. First the youngsters and finally each and every oldster in the party took a ride. When they got home, this potent group formed Pittsburgh Aviation Industries Corp. With the help of the state, they caused to be built a $250,000 air route from Philadelphia to Pittsburgh and then undertook the construction of an air field. There was, of course, no flat spot to be found (one good reason why Pittsburgh took slowly to air). The mere removal of dirt for this field cost $1,000,000. But, however slowly, Pittsburgh has a way of bringing things to success, and on October 25, 1930, the first transcontinental ship of the T. A. T.-Western Air Express landed passengers in Pittsburgh. And the able Mr. Hann conceives that the most important air route of the country will be New York-Philadelphia-Pittsburgh-St. Louis-Los Angeles.

Now the point of this story is simple. Pittsburgh builds solidly after others have experimented with enthusiasms. And this is what seems to have happened in the matter of research and technology in industry. Long years ago Pittsburgh had in its midst one of the most original minds of the country—George Westinghouse. But it is only today, after the passion for technology has swept American industry, that Westinghouse is beginning to emerge as a true symbol of Pittsburgh. Only last month old Pittsburgh erected a monument to him. George Westinghouse grasped more inventive ideas than any Pittsburgher ever has. He was a great adapter with a lucid, industrial mind. He it was who first understood that one essential of high speed is a brake and by the invention of the air brake increased the speed at which trains can safely travel from twenty-five miles an hour to the present seventy or eighty. And it was Westinghouse who launched the alternating electrical current and neglected his air brake company to fight Edison's direct current with a kind of titanic zest. This revolutionized the American electrical world; made possible the modern super-power, the $1,000,000,000 utilities system, and makes his name, in this field, quite as historic as the more adroitly publicized name of Edison (again an illustration that Pittsburgh is not so good at selling).

The modern Westinghouse is a projection of George Westinghouse, which is to say that its corps of researchers, most of them college graduates with special degrees, roll up a bill of about $10,000,000 a year in Westinghouse experimental laboratories. New kinds of motors, turbo-generators, alloys, radio tubes, circuit-breakers, toasters, and stoves have issued from their brains in magnificent profusion, while Westinghouse Air Brake, through its Union Switch and Signal subsidiary, has refined automatic signal systems to the point where signals are shown in the cab as well as out on the track. Not all of these ideas originated with Westinghouse. But most of them did, and the point to grasp is that all of them issued from a laboratory.

The smallest thing that can be said of Westinghouse is that it is half as large as General Electric. Otherwise it is infinite, manufacturing many thousands of varieties of appliances, some of which dwarf the freight cars that carry them away. And the most descriptive thing that can be said of this giant, one of whose manufacturing aisles in East Pittsburgh is nearly a mile long, is that it is not afraid to step into the dark. For the modern radio world came into being no otherwise than by the decision of H. P. Davis, Westinghouse vice president, to put KDKA on the air with a pre-scheduled program. The characteristic of radio, that it can be heard by any number of receivers, was at that time considered an imperfection to be overcome by long expensive years of research. KDKA wiped those hypothetical years off the slate of industrial time.

Pittsburgh loves KDKA and has named an avenue KDKA Avenue. Through KDKA the voice of George Westinghouse, which once seemed to be crying in the wilderness, has been heard and answered. For today

[*Continued on page 146*]

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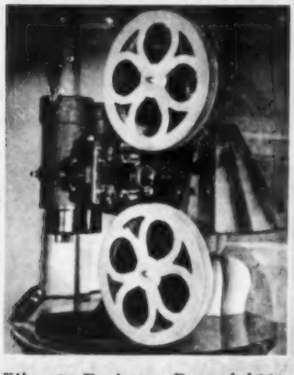

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Eugene R. Black, governor of the Atlanta Federal Reserve Bank, who looks like Andy Gump and does not mind being told so, bluntly gave the Investment Bankers Association a few of his ideas on depression and its causes: "We have been living in an automobile, a Frigidaire, a radio era and have been sitting in an atmosphere of a Corona-Corona. We cannot pay our debts and remain in that atmosphere. Let us not fool ourselves. We cannot have any permanent prosperity when there is a load of debt around our necks . . . I do not agree with those men who say that in America there must be no retrogression from the present high grade of living." (Herbert Hoover said just that, on October 2, 1930, to U. S. Bankers in Cleveland.)

Keystone

At Chicago's conference of major industries, Robert E. Wood, president of Sears, Roebuck, developed an interesting economic thesis:

"In 1860 45 per cent of our people were between the ages of twenty and fifty, 46 per cent were under twenty, and 9 per cent were over fifty. In 1950 the proportion between twenty and fifty will remain the same, but the proportion under twenty will fall from 46 per cent to 27 per cent and that over fifty will rise from 9 per cent to 28 per cent. What does that mean translated into merchandising? It means that, as an older people, older in the sense of age average, the demand for goods and the balance of sales will be greatly changed. It means that the infants' wear department will be relatively less important and that golf goods may become more important. I leave to your imagination the more profound effects in economics that this single change in age distribution will bring . . ."

P. & A.

The articles Thomas F. Woodlock has been publishing since he left the Interstate Commerce Commission have greatly interested railroaders. A drastic proposal of his is the creation of seven rail czars.

International

Hard times mean nothing to Mitzi, who is eighteen years old and of Persian extraction. For when Mitzi's mistress, Mrs. Maude F. Ide, of San Gabriel, California, died, she willed that her house and $15,000 be placed in trust "for the purpose of providing upon said premises a home and proper care for my cat, Mitzi, in case it survives me, so long as it shall live."

Keystone

A gracious gesture to the memory of the late great William Boyce Thompson was the election of his widow, Gertrude Hickman Thompson, to the chairmanship of the board of the Magma Arizona Railroad, which is controlled by Colonel Thompson's Magma Copper Co. Mrs. Thompson shares honors as a feminine railroad head with one other woman: Mrs. Sarah Drain Edenborn, who, succeeding her husband, ruled Louisiana Railway & Navigation Co. for two years.

Pratt & Whitney Aircraft Co., important United Aircraft subsidiary, has elected a new president: Don L. Brown. He succeeds Frederick B. Rentschler, who becomes board chairman.

P. & A.

To many an industrialist Howard Heinz, president of H. J. Heinz & Co., sent out engraved invitations to come to an "international banquet." Occasion was the dedication of an employees recreation building. Speakers included Herbert Hoover (by radio) and Sir Henry Thornton.

© Keystone

A $270,000 consignment of orchids was recently sent from Bound Brook, New Jersey, to be installed in the new Cleveland branch of the famed Thomas Young Nurseries [FORTUNE, February, 1930]. Parmely Herrick, son of the late Myron T., is president of the branch.

the Month

The basic fact about any industrial material is its atomic structure. To photograph this arrangement (vitally important in steel, rubber, rayon, etc.) has always been a process of many hours for each exposure. Now Professor George L. Clark of the University of Illinois, one of the country's outstanding radiological experts, announces the perfection of an X-ray tube with an intensity high enough to take such photographs in seconds or even less. Thus a series of exposures can be made in a few minutes, and the rate and course of the changing atoms can be studied for the first time. The industrial importance of this is great. The X-ray already has improved rayon manufacture, the cold rolling of metals, and many another process. Professor Clark describes his tube as "essentially a supermicroscope going on where the microscope leaves off, clear down to the ultimate atoms themselves."

Emerson D. Owen, advertising manager of New York's Hotel Lexington, was riding in a Fifth Avenue bus when he had an idea: why not donate a daily 500 loaves of bread from the hotel's bakery to feed the city's unemployed? Not only did American Hotels Corp., which controls the Lexington, adopt the idea, but hotels throughout the country are showing interest. If every hotel in New York took up the plan, there would be over 50,000 loaves available daily.

Keystone

That the trustees of the British Museum should choose for the new wing a design by an American is extremely flattering to the architect in question if not to his British colleagues. According to Sir Joseph Duveen, who is giving the wing and therefore should know, the trustees have picked a design by John Russell Pope of New York City. His *kudos* is increased by the fact that the new wing is to house the Museum's most famous possessions, the splendid Elgin Marbles. Outstanding works of Mr. Pope are the Scottish Rite Temple and Constitution Hall (D. A. R.) in Washington, D. C., the projected Yale Gymnasium, the American Battle Monument at Montfaucon, France.

Underwood & Underwood

After spending twelve years and $100,000 in the attempt, the International Ladies' Garment Workers' Union has succeeded in "organizing" Milgrim, fashionable Manhattan dress shop. Milgrim, in front of whose store eighty pickets have been arrested in the course of the union's current general strike against the couturiers, recognizes the union, agrees to the union wage scale. David Dubinsky is secretary-treasurer of the union and leader of the strike. He is thirty-eight, was born in Brest-Litovsk, Poland, was exiled to Siberia by the Czarist Government for labor agitation.

Wide World

Hiram Percy Maxim, inventor of the Maxim silencer and son of the inventor of the Maxim gun, believes he has found a way to prevent noises from coming in an open window. His device, which appears in the picture, works on the same principle as his gun silencer: the sound waves are trapped in winding passages and bounced back and forth until they expire. A noiseless electric fan draws the air in through the silencer, which is felt lined. Says the inventor: "Maxim can silence any noise that comes out of a pipe."

P & A

A name great in Jewry and in chemistry is that of Chaim Weizmann, English industrial chemist who discovered that bacterium known as *clostridium acetobutylicum*, which turns corn into acetone, Butanol, ethyl alcohol, and methanol. Great Britain's recent bearish pronouncement on the Hebraization of Palestine received no rebuke more impressive than the resignation of Dr. Weizmann as president of the Jewish Agency and of the World Zionist Organization.

© Underwood & Underwood

One result of the reorganization of the $23,000,000 Empire Steel Corp. that took place when Pickands, Mather acquired a dominating interest was the election of a new board chairman: Paul Llewellyn, formerly president of Interstate Iron & Steel.

P & A

Under the aggressive leadership of Andrew J. Maloney, one-time coal miner, Philadelphia & Reading Coal & Iron Corp. is doing much to keep away the wolf that waits at the door of every hard coal company. Most recent move: the trading of its power properties to National Power & Light Co. for a block of the latter company's stock.

Looking into a City: Pittsburgh

[*Continued from page 142*]

there is not an important industry in this tangle of 300-odd industries that is not laying aside generous portions of its income for research and technological development. For instance, National Tube has developed a new rotary electric weld for its pipes. The Pittsburgher has suddenly discovered that science offers him a chance to multiply his genius which, as we have pointed out, is a genius for combination.

Leaving the industrial river banks and coming back to Schenley Park, where the skyscraper Cathedral of Learning is almost completed, we find the new enthusiasm for technology about to be enshrined in a Greek temple both grand and chaste. It is the Mellon Institute, an institute utterly unique, whose aim is not merely to seek knowledge, but to apply it directly to industry; to create the next seventy-five years.

The Institute is no charity. Neither is it a place where scientists of Einsteinian caliber gather for dispassionate research. It is a laboratory under the direction of that affable universalist, Edward R. Weidlein, maintained for the convenience and at the expense of concerns who are answerable to their stockholders. Even a competitor of the Mellon Raj may here investigate his special problem, paying, like anyone else, the researchers' salaries and the laboratory expenses. This payment is called a fellowship, and some fellowships run as high as $100,000 a year. Total of all seventy-one fellowships at present is about $1,000,000 a year, a 16 per cent increase over that of a year ago.

Pending the erection of the snow-white Grecian temple, the Institute is housed in a dun-colored stone building, very overcrowded and somewhat hectic. It is plunged into a cacophony of research to delight the heart of the most ardent Pittsburgher. Here Portland Cement has erected 350 experimental walls. Here Heinz developed the new rice flakes, Simmons investigates sleep. Here is a fellowship to discover how to make glass from vegetable matter; and here are incongruous others for the study of corrosion, dentistry, electrical precipitation, fish, carbonated beverages, fertilizers, ores, fibres, dry cleaning, laundering, matches, petroleum, zinc, rubber, and wrought iron—a fascinating, never-ending symposium of modern industrial technology.

What will arise out of this no one can tell. But Andrew Mellon has guessed. The industrial logic that has carried Pittsburgh from the tiny Anshutz furnace to the ownership and control of a public utility gas system as far-flung, as magnificent as the superpower of Morgan, is Mr. Mellon's logic, too. If any institute could be invented to teach Pittsburgh how to carry this logic further, it is his.

The journalist who presumes to summarize the destiny of 1,000,000 souls who have brought into being, among other things, the largest tonnage-producing area of the Pennsylvania Railroad, takes upon himself heavy responsibilities. But in so far as this city can be summarized, the facts are thus. During the last decade, the population of metropolitan Pittsburgh increased at the rate of 15 per cent, which is somewhat greater than the rate of most large cities. During the same decade, however, the dollar-value of industrial products (exclusive of building and of public service corporations) declined from $2,400,000,000 in 1920 to about $1,700,000,000 in the boom year of 1929—a total decline of $700,000,000. If these figures are adjusted by the basic price indices, that for 1929 is found to be substantially in excess of that for 1920; yet there is here no growth comparable to the growth of younger and more western communities, which have boomed into prominence during the past decade.

The fact is that a new era is being forced upon the people of the Allegheny. Their natural resources and their brawn can carry them no further. Their gas has all blown away, their oil dribbles into mere barrels, their wonderful crown of coal has been usurped by West Virginia and Tennessee. Nor did they ever have the right kind of iron ore to make steel. They are up against competition in resources from forty-eight fat states. And they have one solution. That solution was first discovered by George Westinghouse. More recently it has been discovered by the Koppers Co., through which Pittsburgh supplies half the Atlantic seaboard with gas, though it has no gas left under the ground. That is a technological solution. A similar solution awaits the coal problem. Its fulfillment will come neither from the bowels of the Carrie furnaces nor even from the mottoes on the Romanesque walls of Heinz. Its fulfillment will be born from those ample intellectual temples of Schenley district—the Cathedral of Learning, the Carnegie group, the Mellon Institute.

Courtesy Westinghouse Electric & Manufacturing Co.

THE ROMANCE OF THE MONONGAHELA

The modernization of the steel mills which is eliminating Pittsburgh smoke, has also toned down the glow of the mills at night. Nevertheless, A. H. Gorson has painted Pittsburgh darkness as Pittsburghers like to think of it.

* * *

Last March 25, on his seventy-fifth birthday, the admiring and loving citizens gave Andrew Mellon a banquet at the Pittsburgh Golf Club—an exclusive club without a golf course. He arose to make a speech. Very timidly, very modestly he read from a typed manuscript words which he had chosen from seventy-five active years. He said that he was not deserving of all the kind things that had been said of him during the evening. He said that he would rather hear praises from this gathering than from any other gathering. He said, after tracing the history of Pittsburgh, "If I were given the opportunity to exchange my own period of time for any other, I would choose without hesitation the next three-quarters of a century and, needless to add, I would live it in America and preferably in Pittsburgh."

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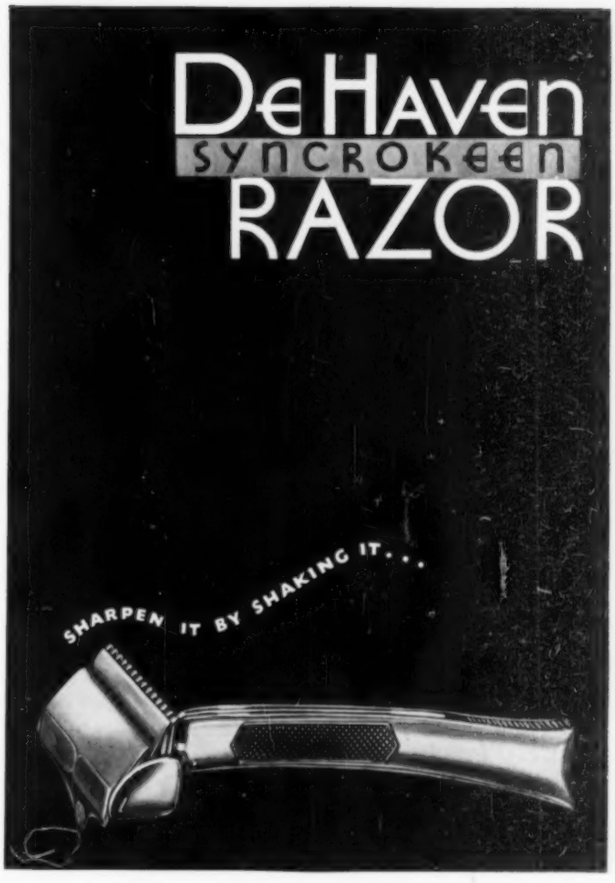

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Afterthoughts on Pittsburgh

JUST as the Pittsburgher passes red-hot blooms through rolling machinery to squeeze them into definite shapes, so the rolls of FORTUNE have shaped the story of the Allegheny, which, now that the steel is cool, can be submitted to examination.

And first of all the journalist with an eye for defects notes that he has squeezed out of his story Pittsburgh's notorious Herron Hill. This is the roughest and toughest spot between Philadelphia and Chicago, where number games, slot machines, speakeasies, and bawdyhouses have made nightmares of a dozen police commissariats. What is worse, this Hill is not tucked away in the outskirts of the city, but rises right out of the financial district, so that every tycoon and rajah drives around it on his way to and from his home and his office. Yet never has it been exterminated.

The FORTUNE journalist notes that other journalists not only do not fail to mention Herron Hill, but usually start their stories of Pittsburgh from that lively spot. But here he takes strong issue. For he cannot understand how a description of the Hill, which differs not very radically from other active American slums, would further any estimate of Pittsburgh's economic position in our present civilization. Were all the bawdyhouses closed, the Pittsburgh Coal Co. would, so far as he can see, still be in the red, by virtue of the favorable freight rates given to the southern operators. And should the Hill thrive lustily and lustfully for the next seventy-five years, the destiny of the laboratories in the Schenley district, working out Pittsburgh's technological future, would not seem to be endangered in the least.

And then, too, there is that alarming statement which this journalist has made about Pittsburgh's being a *gentle* city. From what aberration of intellect and enthusiasm did this statement arise? Frankly, this. The journalist went out to the Allegheny dressed in metaphorical shin guards. Heavy upon his heart lay the vision of the typical stogy-chewing Pittsburgh baron, brutalized by steel, hardened by competition. Yet in not one of nearly 100 interviews was the intruder either bullied or reviled, and having been bullied and reviled elsewhere, he naturally came to the conclusion that this Allegheny psychology is not the two-fisted affair it is supposed to be.

Let the reader grasp the point clearly. The Pittsburgher will fight, and fight ruthlessly. He has a good knock-out. But he does not like to start business that way—his first instinct is to be friendly. This is a habit of mind which can best be described (if the reader knows his U. S.) as Pennsylvanian, and more especially Philadelphian. Indeed, the psychological similarities between Pennsylvania's eastern metropolis on the banks of the Delaware and this western one at the head of the Ohio can scarcely be overemphasized. And the most outstanding similarity is this one of gentlemanliness.

Take as an example J. H. Hillman Jr., to whose interests a whole section of our story could well have been devoted. His father started as a small coal broker, and now he himself is at the head of a banking system second only to the Mellon system. He it is who financed the pioneering A. M. Byers Co. and owns one of the largest blocks of the stock. With typical Pittsburghian love of combination, he also controls Spang-Chalfant, makers of iron pipe. And he has built up Pennsylvania Industries, Inc. and Pennsylvania Bankshares & Securities Corp. to their present combined total of $17,500,000 assets.

Now the word goes round that Mr. Hillman is hard-boiled and ruthless, wherefore the said journalist prepared himself. But without reason. He found a man who, like all Pittsburghers, hates publicity, who nevertheless, as soon as he understood what the journalist was trying to do, gave orders that he should be accommodated. Because Mr. Hillman has downright ideas, because he can keep several corps of stenographers working at high speed, because he can hit hard when anything gets in his way are none of them reasons for overlooking the natural instinct for kindliness that is written plainly in his manner and upon his face.

And in this connection it will be said that the present article has devoted too much space to the Mellons, at the expense of other Pittsburgh powers, in answer to which this journalist wishes to point out that an outline of the Mellon Raj is really the shortest cut to the understanding of all Pittsburgh systems and interests. Differences in details there certainly are. But Mr. Hillman's Associated Banks, with their $226,000,000 resources (including First National), are gathered around Peoples-Pittburgh Trust Co. in very much the same way as Mellbank and other Mellon banks are centralized by the Union Trust Co. And Andrew Mellon's system of more than 100 directorates (before he resigned them) was, from a national point of view, of the same species as Mr. Davison's (around Davison Coke & Iron), Mr. Lehman's, Mr. Flannery's, or Mr. Hillman's: the same species carried to a more national conclusion.

The Hotel
BERMUDIANA

Opens Dec. 22

Bermuda's center of social activity is more resplendent than ever in its new decorative scheme. Modern . . . fireproof . . . newly renovated. Set in the center of 15 acres of tropic charm, this smart gathering place offers delightful accommodations for 500 guests. Outstanding cuisine and service.

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Hotel Bermudiana, Bermuda, or

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565 Fifth Ave., N. Y. City

or any Authorized Tourist Agent

A
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to
Hotel Hollenden

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors. Anything that is required of a good hotel may be found at the Hollenden. You are cordially invited to make the Hollenden your home when you are away from home. The Crystal Dining Room and the Hollenden Coffee Shop offer a variety of good eating places.

Sincerely yours,

Vice Pres. & Gen. Mgr.

In Cleveland-it's The
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THEO. DE WITT
Vice Pres. and Gen. Mgr.

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Come to El Mirador, in the Garden of the Sun

Leave care behind. Find complete change . . . a new land, new interests, a new zest in life.

Radiant sunshine all day long. Peaceful nights of perfect repose. All outdoors to play in. Horses to ride, mountains to climb, canyons to explore. Golf, tennis, bathing, dancing.

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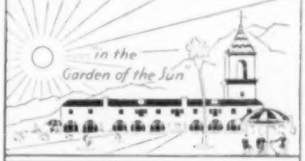

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PALM SPRINGS
CALIFORNIA
America's Foremost Desert Resort

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CAREFUL buying demands that you analyze your insurance just as you analyze your investments. You cannot afford to take safety for granted. The protection of your property is fully as important as the income from your securities.

Shrewd buyers choose CENTRAL insurance—for safety and for saving—for its unquestioned protection—for its fair adjustments—for its prompt payment of losses—and for its cost-reducing dividend.

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Fire, Automobile and Tornado Insurance for Select Risks

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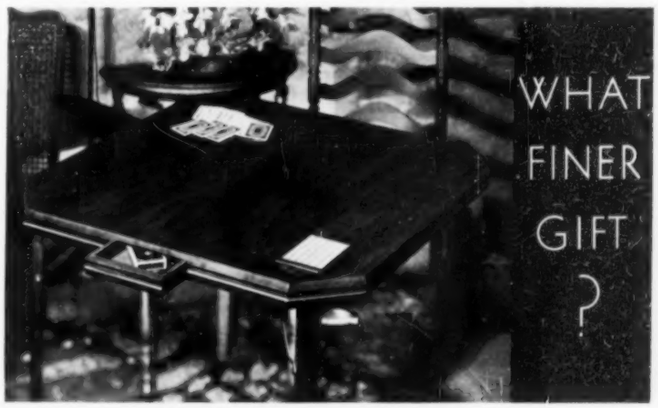

A new and better CARD TABLE

ASK your dealer to show you the distinctive new Cowdin Card Table. Built of beautifully grained hardwood—walnut, mahogany or gum—especially prepared for card playing. Sanitary and stain-proof. Strong and durable . . . will last a lifetime. Dependable, easily operated folding mechanism. Built-in score pad, flush with top of table and fed from a continuous roll of score sheets. Detachable ash trays for two corners. A self-latching drawer to contain cards, pencils and ash trays when they are not in use.

WE WILL SHIP DIRECT if not yet available through your favorite furniture store, department store or decorator. Comes sheathed in flannel covering, packed in individual carton. Can be delivered anywhere in the United States. Send for illustrated folder. THE COWDIN COMPANY, Portland, Ore.

THE Cowdin TABLE

Cowdin Company, Dept. A
227 Davis St., Portland, Oregon
Please send illustrated Cowdin Card Table folder.
Name
Address

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INDUSTRIAL ENGINEERS

• • •

Business is taking a definite upturn. **NOW** is the time to use ESTES SERVICE in your Manufacturing and Repair Departments to make up for losses suffered during the dull period.

Under date of April 8, 1930, Mr. E. Z. Blagg, Vice President of Globe Wernicke Company, Cincinnati, wrote us—"I thought you might be interested to know that the system which you installed in our plant **fifteen years ago** is still in use and proving very satisfactory in every way".

• • •

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Eighteen Consecutive Years
Serving Industry

Plant Layout — Production Control
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also
Estes Wage Incentive Plan for
Maintenance and Repair Departments

4753 BROADWAY
CHICAGO

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DRIES QUICKLY
Saves valuable time and reduces floor space

RESISTS SCRATCHING
Imparts a tough protective film

BEAUTIFIES
In many lovely shades or clear and transparent

IS WATERPROOF
Protects many surfaces from moisture

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Soap and water removes dirt quickly

Consult the company that supplies your finishing materials to learn how nitrocellulose lacquer can save money for you. Our booklet, "The Story of Modern Lacquer," may help you to determine this. Please write for a copy.

CELLULOSE PRODUCTS DEPT.
HERCULES POWDER COMPANY
(INCORPORATED)
975 King Street, Wilmington, Delaware
Nitrocellulose — Explosives
Cotton Pulp — Naval Stores

The finest corn-and-milk-fed young hogs from Wisconsin's great dairy country are used by the Jones Dairy Farm in the making of the Nation's

CHRISTMAS BREAKFAST
of

JONES DAIRY FARM SAUSAGE

Originated by Milo and "Aunt Sally" Jones in 1834, and now distributed by over 2000 Jones Dealers, chosen from the best and most reliable meat markets in America.

Shipped daily fresh from the farm—WON'T YOU PLEASE GIVE YOUR CHRISTMAS ORDER EARLY, as the Farm's capacity is taxed to the utmost at holiday seasons.

JONES DAIRY FARM
Fort Atkinson, Wis.
In Wisconsin's great dairy center—owned and operated by the Jones Family since 1834.

100 MEMO PICTURES with $1 worth of film

CARRY A MEMO Camera in your pocket — surest, quickest, most convenient still film camera in the world. 50 pictures with one 50-cent daylight-loading Agfa film. Easiest to load. Twick of the thumb advances the film. Spyglass finder locates subject instantly right side up. Memo gets everything on a trip. Wonderful for close-up portraits as well as landscapes. F 6.3 and F 3.5 anastigmat lenses.

Memo pictures are printed on paper exact size, as enlargements, and as projection rolls for a picture show with Memoscope. The new idea in still cameras for greater economy, convenience, utility. Memo $20. Focusing models to $40. For sale by camera dealers. Many thousands of enthusiastic owners. Interesting literature gives full details.

AGFA ANSCO OF BINGHAMTON, N.Y.

Please send me free 36 page Memo handbook

Name _____

Address _____ 22

From a Famed Industrial Chemist—

"Having just spent a most interesting and stimulating hour with FORTUNE, I cannot refrain from sending you my congratulations on having developed a publication of such remarkable character. The color prints, photography, and press work compel my utmost admiration, and the text carries romance and interest into the most unexpected corners of business."

ARTHUR D. LITTLE

Cambridge, Mass.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of Fortune, published monthly at New York, N. Y. for October 1, 1930.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Charles L. Stillman, who, having been duly sworn according to law, deposes and says that he is the Business Manager of Fortune, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Time, Incorporated, 205 East 42nd St., New York, N. Y.; Editor, Henry R. Luce, 205 East 42nd St., New York, N. Y.; Managing Editor Parker Lloyd-Smith, 205 East 42nd St., New York, N. Y.; Business Manager, Charles L. Stillman, 205 East 42nd St., New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Time-Fortune Corporation, 205 East 42nd St., New York, N. Y.; Time, Incorporated, 205 East 42nd St., New York, N. Y.; Robert A. Chambers, 60 East 42nd St., New York, N. Y.; Harry P. Davison, Jr., 23 Wall Street, New York, N. Y.; William V. Griffin, 70 Broadway, New York, N. Y.; Crowell Hadden III, Trustee, Estate of Briton Hadden, 43 Exchange Place, New York, N. Y.; Edith H. Harkness, 4 East 66th St., New York, N. Y.; William H. Harkness, 11 Broad St., New York, N. Y.; Louise H. Ingalls, Navy Building, Washington, D. C.; Robert L. Johnson, 205 E. 42nd St., New York, N. Y.; Roy E. Larsen, 205 E. 42nd St., New York, N. Y.; Wilton Lloyd-Smith, 63 Wall St., New York, N. Y.; Henry R. Luce, 205 E. 42nd St., New York, N. Y.; John S. Martin, 205 E. 42nd St., New York, N. Y.; Samuel W. Meek, Jr., 65 Broadway, New York, N. Y.; General Publishing Corp., 205 East 42nd St., New York, N. Y. (Henry R. Luce.)

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state). None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

CHARLES L. STILLMAN
Business Manager.

Sworn to and subscribed before me this 29th day of September, 1930.
[Seal] Emmeline Dryer.
(My commission expires March 31, 1931.)

John Hancock Series

Partnership Credit

INASMUCH as the death of a partner automatically dissolves a partnership, creditors can force their claims for settlement at once. When it is remembered that *any* partner is liable for *all* the debts of the partnership, it can be readily seen that a partner's dependents are vitally affected by such an occurrence.

Business Life Insurance can be carried by the firm for the reinforcement of credit against such a situation. For further information regarding its uses address:—

INQUIRY BUREAU

John Hancock
MUTUAL
LIFE INSURANCE COMPANY
OF BOSTON, MASSACHUSETTS

197 Clarendon St. Boston, Mass.

Please send information on partnership credit.

Name .....

Address .....

Fr. .....

Over Sixty-Seven Years in Business

ART IN INDUSTRY

In connection with the opening of their new first floor and the painting therefor of murals by Mr. Boardman Robinson, the Kaufmann Department Stores, Inc. announces a prize essay contest on the subject "Art in Industry" the prize to be $1,000 and the prize winning essay to be published in a forthcoming issue of FORTUNE. The judges are Mr. Norman Bel Geddes, Mr. Joseph Urban, Mr. Edgar Kaufmann. Rules of the contest, which closes January, 31, 1931, have been published in previous issues of FORTUNE. For information regarding the contest write the Art in Industry Contests Editor,

Kaufmann Department Stores, Inc.

Fifth Avenue Pittsburg

The American Tobacco Co., Richmond, Va.
Architects and Engineers—J. E. Sirrene & Co., Greenville, S. C.
Contractors—Wise Granite & Construction Co., Richmond, Va.

SATISFACTION

PRACTICAL design, master craftsmanship and accurate installation . . . all based on forty-nine years of engineering experience . . . are the foundation stones on which the lasting satisfaction of Bayley users is built. It is significant that a substantial portion of each year's sales is repeat business from satisfied users, who never take second thought when in the market for metal windows or doors. Today a Bayley user . . . tomorrow a Bayley user. For information, write The William Bayley Company, Springfield, Ohio.

BAYLEY
STEEL WINDOWS & DOORS

Look at the Clock . . . and Relax

Enjoy that extra cup of coffee. Your good clock will tell you when it's "train time." Relax! Read your paper in comfort. A good clock will get you *there* on time.

And then the ladies, bless 'em! They'll enjoy more time for rest or play when clocks direct the household responsibilities. Give the children a clock for their "very own." The results will surprise and delight you.

Just clip the coupon and receive the New Clock Book free. A pleasing story of the romance and proper enjoyment of modern clocks.

Enjoy life—have a clock in every room.

Clock Manufacturers Association of America
Drexel Building Philadelphia, Pa.

Please send me the New Free Booklet "Clocks in the Modern Home".

Name .....

Address .....

This year, every home can have healthful *Moist-Air* [HUMIDITY]

✣

As Low as $150 F.O.B. FACTORY

Installation extra

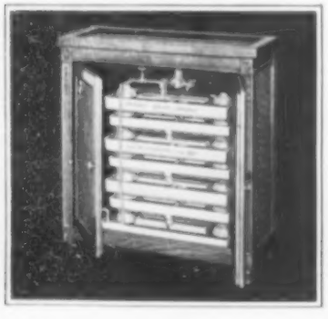
✣

Simple, inexpensive, effective humidifying radiator meets the one vital need of steam, hot water, and vapor heated homes

Winter is here! Will it be again the season of unhealthful overheating? Of dry air that threatens frequent colds, bronchitis, sinus and ear infections, mastoids. Of dry air, that parches and cracks furniture and woodwork, even wilts house plants, while it is stealing energy from your children and yourself? That means discomfort at over-high temperatures?

Now, a humidifying radiator banishes dry air evils

This winter your home need no longer endure dry air. The Doherty-Brehm Humidifying Radiator, the first simple inexpensive effective humidifier for steam, hot water, or vapor heating, now automatically supplies scientifically correct humidity to any radiator heated house. It is the most important advance in winter health and comfort since radiator heating was introduced. It removes the one disadvantage left by radiator heating, adding moist air health to the comfort of well-distributed warmth.



Simple and attentionless as a radiator

It fits into any radiator heating system as easily as an ordinary radiator. Just install it in place of one ordinary radiator, or as an extra unit in the system. Thereafter, it requires no attention. No moving parts to get out of order. No noise, no steam, no odor. You can even detach it and take it with you when you move. *One humidifies an average home*, evaporating as high as 100 gallons daily, automatically regulating the amount to changing weather conditions. And it heats while it humidifies, giving off more heat than a radiator of the same surface.

Masters have produced beautiful period wood cabinets for the Doherty-Brehm. Also in metal cabinets and for wall recessing. In metal cabinets, $150 to $225. In wood cabinets, $245 to $340, f.o.b. factory, installation extra

Handsome cabinets fit into any decorative scheme

In place, it has the appearance of a low-boy cabinet. It is enclosed in beautiful wood cabinets in period styles. Or in handsome metal cabinets or for recessing in the wall.

Easy payments on the CRANE *Budget Plan*

The Doherty-Brehm Radiator Humidifier is sold by **CRANE** through dependable heating and plumbing contractors everywhere. You can buy under the Crane Budget Plan and pay *only 10% down, the rest in small monthly payments.* Have your heating and plumbing contractor equip your home now.

MAIL THIS COUPON FOR FACTS

DOHERTY-BREHM CO., 333 North Michigan Ave., Chicago, Ill.
Please send your instructive booklet about humidity and the Doherty-Brehm Radiator Humidifier.

I have ..... rooms in my house. I have .....hot water..... vapor ..... heat.

Name.....Address.....

DOHERTY-BREHM HUMIDIFIER *Sold By* CRANE

Why "Milky Way" Uses the Poster Way

IT IS EASY to see that Mars, Incorporated places high value on Outdoor Advertising. The makers of Milky Way know that to keep a 5c candy bar moving, mass circulation is needed, and *plenty of it.* ¶ One advertising medium may be seen by one class of readers; another medium by another class; but here's the medium that is seen by *everybody.* Yes, and seen at a most opportune time for selling candy . . . when folks are out of doors, using up energy, going places, *doing things* . . . and so particularly susceptible to candy hunger. ¶ Children too young to read any other advertisements read and *heed* the messages of the posters. And don't forget that these same children are the world's champion candy eaters! Then there are the people of foreign birth or parentage, who in many communities read scarcely any English. They can read the quick, flashing, friendly posters . . . and incidentally *how they eat Milky Way!* ¶ Those are some of the reasons Mars, Incorporated finds poster advertising profitable. Perhaps some of the same reasons apply to your own business. If you have a message for the masses, whether your market is a county or a continent, then Outdoor Advertising can help you efficiently and economically.

1028 CARNEGIE AVENUE
CLEVELAND

Central

320 VANCE STREET
TOLEDO

TEXACO-ETHYL starts quicker.. because it's "DRY"

WHEN your motor greets the first command of the starter with a sputter—that's warning enough of cold weather troubles on the way.

Why not avoid them this winter? You can with Texaco-Ethyl! For the gasoline base in Texaco-Ethyl is the quick-starting *new* and *better* Texaco. It vaporizes so readily that it forms a "dry" gas—an active mixture of gasoline and air which responds to the first spark flash and permits uniform diffusion of the Ethyl compound through the manifold into the cylinders.

Begin to use Texaco-Ethyl now! Do away with the long warming-up periods, excessive crankcase dilution and battery waste. Enjoy the smooth anti-knock performance provided in the Ethyl compound. Even on the coldest days Texaco-Ethyl starts quickly and keeps your engine running so quietly, and so well, that, as far as the engine is concerned, you'll never know that winter has come. Available in all our 48 States.

THE TEXAS COMPANY

Refiners of a complete line of Texaco Petroleum Products, including Gasoline, Motor Oil Industrial, Railroad, Marine and Farm Lubricants, Road Asphalts and Asphalt Roofing

TEXACO *the original* "DRY" GAS + **ETHYL** *nationally famous* ANTI-KNOCK COMPOUND = **TEXACO-ETHYL** THE "DRY" ANTI-KNOCK GASOLINE

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